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<110> Garvan Institute of Medical Research

5 <120> Assay for bipolar affective disorder

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	Ser	Thr	Thr	Arg	Leu	His	Ile	Glu	Trp	Ile	Ser	Lys	Pro	Lys	Gln	
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55	tcc	ctg	gag	ccc	att	tca	ttt	gaa	gaa	tca	ttt	ttt	acc	ttt	act	4284
	Ser	Leu	Glu	Pro	Ile	Ser	Phe	Glu	Glu	Ser	Phe	Phe	Thr	Phe	Thr	
				1355					1360					1365		
60	gtg	atg	gaa	agt	gac	ccc	gtt	gct	cac	atg	att	gga	gta	ata	tct	4329
	Val	Met	Glu	Ser	Asp	Pro	Val	Ala	His	Met	Ile	Gly	Val	Ile	Ser	
				1370					1375					1380		
	gtg	gag	cct	cct	ggc	ata	ccc	ctt	tgg	ttt	gac	atc	act	ggg	ggc	4374
	Val	Glu	Pro	Pro	Gly	Ile	Pro	Leu	Trp	Phe	Asp	Ile	Thr	Gly	Gly	
				1385					1390					1395		

	aac tac gac agt cac ttc gat gtg gac aag gga act gga acc atc	4419
	Asn Tyr Asp Ser His Phe Asp Val Asp Lys Gly Thr Gly Thr Ile	
	1400 1405 1410	
5	att gtt gcc aaa cct ctt gat gca gaa cag aag tca aac tac aac	4464
	Ile Val Ala Lys Pro Leu Asp Ala Glu Gln Lys Ser Asn Tyr Asn	
	1415 1420 1425	
10	ctc aca gtc gag gct aca gat gga acc acc act atc ctc act cag	4509
	Leu Thr Val Glu Ala Thr Asp Gly Thr Thr Thr Ile Leu Thr Gln	
	1430 1435 1440	
15	gta ttc atc aaa gta ata gac aca aat gac cat cgt cct cag ttt	4554
	Val Phe Ile Lys Val Ile Asp Thr Asn Asp His Arg Pro Gln Phe	
	1445 1450 1455	
20	tct aca tca aag tat gaa gtt gtt att cct gaa gat aca gcg cca	4599
	Ser Thr Ser Lys Tyr Glu Val Val Ile Pro Glu Asp Thr Ala Pro	
	1460 1465 1470	
	gaa aca gaa att ttg caa atc agt gct gtg gat cag gat gag aaa	4644
	Glu Thr Glu Ile Leu Gln Ile Ser Ala Val Asp Gln Asp Glu Lys	
	1475 1480 1485	
25	aac aaa cta atc tac act ctg cag agc agt aga gat cca ctg agt	4689
	Asn Lys Leu Ile Tyr Thr Leu Gln Ser Ser Arg Asp Pro Leu Ser	
	1490 1495 1500	
30	ctc aag aaa ttt cgt ctt gat cct gca acc gcc tct ctc tat act	4734
	Leu Lys Lys Phe Arg Leu Asp Pro Ala Thr Gly Ser Leu Tyr Thr	
	1505 1510 1515	
35	tct gag aaa ctg gat cat gaa gct gtt tca cca gca cac ctc acg	4779
	Ser Glu Lys Leu Asp His Glu Ala Val Ser Pro Ala His Leu Thr	
	1520 1525 1530	
40	gtc atg gta cga gat caa gat gtg cct gta aaa cgc aac ttt gca	4824
	Val Met Val Arg Asp Gln Asp Val Pro Val Lys Arg Asn Phe Ala	
	1535 1540 1545	
	agg att gtg gtc aat gtc agc gac acg aat gac cac gcc ccg tgg	4869
	Arg Ile Val Val Asn Val Ser Asp Thr Asn Asp His Ala Pro Trp	
	1550 1555 1560	
45	ttc acc gct tcc tcc tac aaa ggg cgg gtt tat gaa tcg gca gcc	4914
	Phe Thr Ala Ser Ser Tyr Lys Gly Arg Val Tyr Glu Ser Ala Ala	
	1565 1570 1575	
50	gtt ggc tca gtt gtg ttg cag gtg acg gct ctg gac aag gac aaa	4959
	Val Gly Ser Val Val Leu Gln Val Thr Ala Leu Asp Lys Asp Lys	
	1580 1585 1590	
55	ggg aaa aat gct gaa gtg ctg tac tcg atc gag tca gga aat att	5004
	Gly Lys Asn Ala Glu Val Leu Tyr Ser Ile Glu Ser Gly Asn Ile	
	1595 1600 1605	
60	gga aat att gga aat tct ttt atg att gat cct gtc ttg ggc tct	5049
	Gly Asn Ile Gly Asn Ser Phe Met Ile Asp Pro Val Leu Gly Ser	
	1610 1615 1620	
	att aaa act gcc aaa gaa tta gat cga agt aac caa gcg gag tat	5094
	Ile Lys Thr Ala Lys Glu Leu Asp Arg Ser Asn Gln Ala Glu Tyr	
	1625 1630 1635	

	gat tta atg gta	aaa gct aca gat aag	ggc agt cca cca atg agt	5139
	Asp Leu Met Val	Lys Ala Thr Asp Lys	Gly Ser Pro Pro Met Ser	
	1640	1645	1650	
5	gaa ata act tct	gtg cgt atc ttt gtc	aca att gct gac aac gcc	5184
	Glu Ile Thr Ser	Val Arg Ile Phe Val	Thr Ile Ala Asp Asn Ala	
	1655	1660	1665	
10	tct ccg aag ttt	aca tca aaa gaa tat	tct gtt gaa ctt agt gaa	5229
	Ser Pro Lys Phe	Thr Ser Lys Glu Tyr	Ser Val Glu Leu Ser Glu	
	1670	1675	1680	
15	act gtc agc att	ggg agt ttc gtt ggg	atg gtt aca gcc cat agt	5274
	Thr Val Ser Ile	Gly Ser Phe Val Gly	Met Val Thr Ala His Ser	
	1685	1690	1695	
20	caa tca tca gtg	gtg tat gaa ata aaa	gat gga aat aca ggt gat	5319
	Gln Ser Ser Val	Val Tyr Glu Ile Lys	Asp Gly Asn Thr Gly Asp	
	1700	1705	1710	
	gct ttt gat att	aat cca cat tct gga	act atc atc act cag aaa	5364
	Ala Phe Asp Ile	Asn Pro His Ser Gly	Thr Ile Ile Thr Gln Lys	
	1715	1720	1725	
25	gcc ctg gac ttt	gaa act ttg ccc att	tac aca ttg ata ata caa	5409
	Ala Leu Asp Phe	Glu Thr Leu Pro Ile	Tyr Thr Leu Ile Ile Gln	
	1730	1735	1740	
30	gga act aac atg	gct ggt ttg tcc act	aat aca acg gtt cta gtt	5454
	Gly Thr Asn Met	Ala Gly Leu Ser Thr	Asn Thr Thr Val Leu Val	
	1745	1750	1755	
35	cac ttg cag gat	gag aat gac aac gcg	cca gtt ttt atg cag gca	5499
	His Leu Gln Asp	Glu Asn Asp Asn Ala	Pro Val Phe Met Gln Ala	
	1760	1765	1770	
40	gaa tat aca gga	ctc att agt gaa tca	gcc tca att aac agc gtg	5544
	Glu Tyr Thr Gly	Leu Ile Ser Glu Ser	Ala Ser Ile Asn Ser Val	
	1775	1780	1785	
	gtc cta aca gac	agg aat gtc cca ctg	gtg att cga gca gct gat	5589
	Val Leu Thr Asp	Arg Asn Val Pro Leu	Val Ile Arg Ala Ala Asp	
	1790	1795	1800	
45	gct gat aaa gac	tca aat gct ttg ctt	gta tat cac att gtt gaa	5634
	Ala Asp Lys Asp	Ser Asn Ala Leu Leu	Val Tyr His Ile Val Glu	
	1805	1810	1815	
50	cca tct gta cac	aca tat ttt gct att	gat tct agc act ggt gct	5679
	Pro Ser Val His	Thr Tyr Phe Ala Ile	Asp Ser Ser Thr Gly Ala	
	1820	1825	1830	
55	att cat aca gta	cta agt ctg gac tat	gaa gaa aca agt att ttt	5724
	Ile His Thr Val	Leu Ser Leu Asp Tyr	Glu Glu Thr Ser Ile Phe	
	1835	1840	1845	
60	cac ttt acc gtc	caa gtg cat gac atg	gga acc cca cgt tta ttt	5769
	His Phe Thr Val	Gln Val His Asp Met	Gly Thr Pro Arg Leu Phe	
	1850	1855	1860	
	gct gag tat gca	gcg aat gta aca gta	cat gta att gac att aat	5814
	Ala Glu Tyr Ala	Ala Asn Val Thr Val	His Val Ile Asp Ile Asn	
	1865	1870	1875	

		gac tgc ccc cct	gtg ttt gcc aag cca	tta tat gaa gca tct ctt	5859
		Asp Cys Pro Pro	Val Phe Ala Lys Pro	Leu Tyr Glu Ala Ser Leu	
		1880	1885	1890	
5		ttg tta cca aca	tac aaa gga gta aaa	gtc atc aca gta aat gct	5904
		Leu Leu Pro Thr	Tyr Lys Gly Val Lys	Val Ile Thr Val Asn Ala	
		1895	1900	1905	
10		aca gat gct gat	tca agt gca ttc tca	cag ttg att tac tcc atc	5949
		Thr Asp Ala Asp	Ser Ser Ala Phe Ser	Gln Leu Ile Tyr Ser Ile	
		1910	1915	1920	
15		acc gaa ggc aac	atc ggg gag aag ttt	tct atg gac tac aag act	5994
		Thr Glu Gly Asn	Ile Gly Glu Lys Phe	Ser Met Asp Tyr Lys Thr	
		1925	1930	1935	
20		ggt gct ctc act	gtc caa aac aca act	cag tta aga agc cgc tac	6039
		Gly Ala Leu Thr	Val Gln Asn Thr Thr	Gln Leu Arg Ser Arg Tyr	
		1940	1945	1950	
		gag cta acc gtt	aga gct tcc gat ggc	aga ttt gcc ggc ctt acc	6084
		Glu Leu Thr Val	Arg Ala Ser Asp Gly	Arg Phe Ala Gly Leu Thr	
		1955	1960	1965	
25		tct gtc aaa att	aat gtg aaa gaa agc	aaa gaa agt cac cta aag	6129
		Ser Val Lys Ile	Asn Val Lys Glu Ser	Lys Glu Ser His Leu Lys	
		1970	1975	1980	
30		ttt acc cag gat	gtc tac tct gcg gta	gtg aaa gag aat tcc acc	6174
		Phe Thr Gln Asp	Val Tyr Ser Ala Val	Val Lys Glu Asn Ser Thr	
		1985	1990	1995	
35		gag gcc gaa aca	tta gct gtc att act	gct att ggg agt cca atc	6219
		Glu Ala Glu Thr	Leu Ala Val Ile Thr	Ala Ile Gly Ser Pro Ile	
		2000	2005	2010	
40		aat gag cct ttg	ttt tat cac atc ctc	aac cca gat cgc aga ttt	6264
		Asn Glu Pro Leu	Phe Tyr His Ile Leu	Asn Pro Asp Arg Arg Phe	
		2015	2020	2025	
		aaa ata agc cgc	act tca ggg gtt ctg	tca acc act ggc acg ccc	6309
		Lys Ile Ser Arg	Thr Ser Gly Val Leu	Ser Thr Thr Gly Thr Pro	
		2030	2035	2040	
45		ttc gat cgt gag	cag cag gag gcg ttt	gat gtg gtt gta gaa gtg	6354
		Phe Asp Arg Glu	Gln Gln Glu Ala Phe	Asp Val Val Val Glu Val	
		2045	2050	2055	
50		ata gag gaa cat	aag cct tct gca gtg	gcc cac gtt gtc gtg aag	6399
		Ile Glu Glu His	Lys Pro Ser Ala Val	Ala His Val Val Val Lys	
		2060	2065	2070	
55		gtc att gta gaa	gac caa aat gat aat	gcg ccg gtg ttt gtc aac	6444
		Val Ile Val Glu	Asp Gln Asn Asp Asn	Ala Pro Val Phe Val Asn	
		2075	2080	2085	
60		ctt ccc tac tac	gcc gtt gtt aaa gtg	gac act gag gtg ggc cat	6489
		Leu Pro Tyr Tyr	Ala Val Val Lys Val	Asp Thr Glu Val Gly His	
		2090	2095	2100	
		gtc att cgc tat	gtc act gct gta gac	aga gac agt ggc aga aac	6534
		Val Ile Arg Tyr	Val Thr Ala Val Asp	Arg Asp Ser Gly Arg Asn	
		2105	2110	2115	

	ggg gaa gtg cat	tac tac ctc aag gaa	cat cat gaa cac ttt	caa	6579
	Gly Glu Val His	Tyr Tyr Leu Lys Glu	His His Glu His Phe	Gln	
	2120	2125	2130		
5	att gga ccc ttg	ggt gaa att tca ctg	aaa aag caa ttt gag	ctt	6624
	Ile Gly Pro Leu	Gly Glu Ile Ser Leu	Lys Lys Gln Phe Glu	Leu	
	2135	2140	2145		
10	gac acc tta aat	aaa gaa tat ctt gtt	aca gtg gtt gca aaa	gat	6669
	Asp Thr Leu Asn	Lys Glu Tyr Leu Val	Thr Val Val Ala Lys	Asp	
	2150	2155	2160		
15	gga ggg aac ccg	gcc ttt tca gcg gaa	gtt atc gtt ccg atc	act	6714
	Gly Gly Asn Pro	Ala Phe Ser Ala Glu	Val Ile Val Pro Ile	Thr	
	2165	2170	2175		
20	gtc atg aat aaa	gcc atg cct gtg ttt	gaa aaa cct ttc tac	agt	6759
	Val Met Asn Lys	Ala Met Pro Val Phe	Glu Lys Pro Phe Tyr	Ser	
	2180	2185	2190		
	gca gag att gca	gag agc atc cag gtg	cac agc cct gtg gtc	cac	6804
	Ala Glu Ile Ala	Glu Ser Ile Gln Val	His Ser Pro Val Val	His	
	2195	2200	2205		
25	gtg cag gct aac	agc ccg gaa ggc ctg	aaa gtg ttc tac agc	atc	6849
	Val Gln Ala Asn	Ser Pro Glu Gly Leu	Lys Val Phe Tyr Ser	Ile	
	2210	2215	2220		
30	aca gac gga gac	cct ttc agc cag ttc	act att aac ttc aat	act	6894
	Thr Asp Gly Asp	Pro Phe Ser Gln Phe	Thr Ile Asn Phe Asn	Thr	
	2225	2230	2235		
35	gga gtt atc aat	gtc ata gct cct ctg	gac ttt gag gcc cac	ccg	6939
	Gly Val Ile Asn	Val Ile Ala Pro Leu	Asp Phe Glu Ala His	Pro	
	2240	2245	2250		
40	gca tat aag ctg	agc ata cgc gca act	gac tcc ttg acg ggc	gct	6984
	Ala Tyr Lys Leu	Ser Ile Arg Ala Thr	Asp Ser Leu Thr Gly	Ala	
	2255	2260	2265		
	cat gct gaa gta	ttt gtg gac atc ata	gta gac gac atc aat	gat	7029
	His Ala Glu Val	Phe Val Asp Ile Ile	Val Asp Asp Ile Asn	Asp	
	2270	2275	2280		
45	aac cct cct gtg	ttt gct cag cag tct	tat gcg gtg acc ctg	tct	7074
	Asn Pro Pro Val	Phe Ala Gln Gln Ser	Tyr Ala Val Thr Leu	Ser	
	2285	2290	2295		
50	gag gca tct gta	att gga acg tct gtt	gtt caa gtt aga gcc	acc	7119
	Glu Ala Ser Val	Ile Gly Thr Ser Val	Val Gln Val Arg Ala	Thr	
	2300	2305	2310		
55	gat tct gat tca	gaa cca aat aga gga	atc tca tac cag atg	ttt	7164
	Asp Ser Asp Ser	Glu Pro Asn Arg Gly	Ile Ser Tyr Gln Met	Phe	
	2315	2320	2325		
60	ggg aat cac agc	aag agt cat gat cat	ttt cat gta gac agc	agc	7209
	Gly Asn His Ser	Lys Ser His Asp His	Phe His Val Asp Ser	Ser	
	2330	2335	2340		
	act ggc ctc atc	tca cta ctc aga acc	ctg gat tac gag cag	tcc	7254
	Thr Gly Leu Ile	Ser Leu Leu Arg Thr	Leu Asp Tyr Glu Gln	Ser	
	2345	2350	2355		



	cgg cag cac acg att ttt gtg agg gca gtt gat ggt ggt atg ccc	7299
	Arg Gln His Thr Ile Phe Val Arg Ala Val Asp Gly Gly Met Pro	
	2360 2365 2370	
5	acg ctg agc agt gat gtg att gtc acg gtg gac gtt acc gac ctc	7344
	Thr Leu Ser Ser Asp Val Ile Val Thr Val Asp Val Thr Asp Leu	
	2375 2380 2385	
10	aat ggt aat cca cca ctc ttt gaa caa cag att tat gaa gcc aga	7389
	Asn Gly Asn Pro Pro Leu Phe Glu Gln Gln Ile Tyr Glu Ala Arg	
	2390 2395 2400	
15	att agc gag cac gcc cct cat ggg cat ttc gtg acc tgt gta aaa	7434
	Ile Ser Glu His Ala Pro His Gly His Phe Val Thr Cys Val Lys	
	2405 2410 2415	
20	gcc tat gat gca gac agt tca gac ata gac aag ttg cag tat tcc	7479
	Ala Tyr Asp Ala Asp Ser Ser Asp Ile Asp Lys Leu Gln Tyr Ser	
	2420 2425 2430	
	att ctg tct ggc aat gat cat aaa cat ttt gtc att gac agt gca	7524
	Ile Leu Ser Gly Asn Asp His Lys His Phe Val Ile Asp Ser Ala	
	2435 2440 2445	
25	aca ggg att atc acc ctc tca aac ctg cac cgg cac gcc ctg aag	7569
	Thr Gly Ile Ile Thr Leu Ser Asn Leu His Arg His Ala Leu Lys	
	2450 2455 2460	
30	cca ttt tac agt ctt aac ctg tca gtg tct gat gga gtt ttt aga	7614
	Pro Phe Tyr Ser Leu Asn Leu Ser Val Ser Asp Gly Val Phe Arg	
	2465 2470 2475	
35	agt tcc acc cag gtt cat gta act gta att gga ggc aat ttg cac	7659
	Ser Ser Thr Gln Val His Val Thr Val Ile Gly Gly Asn Leu His	
	2480 2485 2490	
40	agt cct gct ttc ctt cag aac gaa tat gaa gtg gaa cta gct gaa	7704
	Ser Pro Ala Phe Leu Gln Asn Glu Tyr Glu Val Glu Leu Ala Glu	
	2495 2500 2505	
	aac gct ccc cta cat acc ctg gtg atg gag gtg aaa act acg gat	7749
	Asn Ala Pro Leu His Thr Leu Val Met Glu Val Lys Thr Thr Asp	
	2510 2515 2520	
45	ggg gat tct ggt att tat ggt cac gtt act tac cat att gta aat	7794
	Gly Asp Ser Gly Ile Tyr Gly His Val Thr Tyr His Ile Val Asn	
	2525 2530 2535	
50	gac ttt gcc aaa gac aga ttt tac ata aat gag aga gga cag ata	7839
	Asp Phe Ala Lys Asp Arg Phe Tyr Ile Asn Glu Arg Gly Gln Ile	
	2540 2545 2550	
55	ttt act ttg gaa aaa ctt gat cga gaa acc ccg gcg gag aaa gtg	7884
	Phe Thr Leu Glu Lys Leu Asp Arg Glu Thr Pro Ala Glu Lys Val	
	2555 2560 2565	
	atc tca gtc cgt tta atg gct aag gat gct gga gga aaa gtt gct	7929
	Ile Ser Val Arg Leu Met Ala Lys Asp Ala Gly Gly Lys Val Ala	
	2570 2575 2580	
60	ttc tgc acc gtg aat gtc atc ctt aca gat gac aat gac aat gca	7974
	Phe Cys Thr Val Asn Val Ile Leu Thr Asp Asp Asn Asp Asn Ala	
	2585 2590 2595	

	cca	caa	ttt	cga	gca	acc	aaa	tac	gaa	gtg	aat	atc	ggg	tcc	agt	8019
	Pro	Gln	Phe	Arg	Ala	Thr	Lys	Tyr	Glu	Val	Asn	Ile	Gly	Ser	Ser	
				2600					2605					2610		
5	gct	gct	aaa	ggg	act	tca	gtc	gta	aag	tct	gca	agt	gat	gcc	gat	8064
	Ala	Ala	Lys	Gly	Thr	Ser	Val	Val	Lys	Ser	Ala	Ser	Asp	Ala	Asp	
				2615					2620					2625		
10	gag	ggc	tcc	aat	gcc	gac	atc	acc	tat	gcc	att	gaa	gca	gac	tct	8109
	Glu	Gly	Ser	Asn	Ala	Asp	Ile	Thr	Tyr	Ala	Ile	Glu	Ala	Asp	Ser	
				2630					2635					2640		
15	gaa	agt	gta	aaa	gag	aat	ttg	gaa	att	aac	aaa	ctg	tcc	ggc	gta	8154
	Glu	Ser	Val	Lys	Glu	Asn	Leu	Glu	Ile	Asn	Lys	Leu	Ser	Gly	Val	
				2645					2650					2655		
20	atc	act	aca	aag	gag	agc	ctc	att	ggc	ttg	gaa	aat	gaa	ttc	ttc	8199
	Ile	Thr	Thr	Lys	Glu	Ser	Leu	Ile	Gly	Leu	Glu	Asn	Glu	Phe	Phe	
				2660					2665					2670		
	act	ttc	ttt	gtt	aga	gct	gtg	gat	aat	ggg	tct	cca	tca	aaa	gaa	8244
	Thr	Phe	Phe	Val	Arg	Ala	Val	Asp	Asn	Gly	Ser	Pro	Ser	Lys	Glu	
				2675					2680					2685		
25	tct	gtt	gtt	ctt	gtc	tat	gtt	aaa	atc	ctt	cca	ccg	gaa	atg	cag	8289
	Ser	Val	Val	Leu	Val	Tyr	Val	Lys	Ile	Leu	Pro	Pro	Glu	Met	Gln	
				2690					2695					2700		
30	ctt	cca	aaa	ttt	tca	gaa	cct	ttc	tat	acc	ttt	aca	gtg	tca	gag	8334
	Leu	Pro	Lys	Phe	Ser	Glu	Pro	Phe	Tyr	Thr	Phe	Thr	Val	Ser	Glu	
				2705					2710					2715		
35	gac	gtg	cct	gtt	gga	aca	gag	ata	gat	ctc	atc	cga	gca	gaa	cat	8379
	Asp	Val	Pro	Val	Gly	Thr	Glu	Ile	Asp	Leu	Ile	Arg	Ala	Glu	His	
				2720					2725					2730		
40	agt	ggg	act	gtt	ctt	tac	agc	ctg	gtc	aaa	ggg	aat	act	cca	gaa	8424
	Ser	Gly	Thr	Val	Leu	Tyr	Ser	Leu	Val	Lys	Gly	Asn	Thr	Pro	Glu	
				2735					2740					2745		
	agc	aat	agg	gat	gag	tcc	ttt	gtg	att	gac	aga	cag	agc	ggg	aga	8469
	Ser	Asn	Arg	Asp	Glu	Ser	Phe	Val	Ile	Asp	Arg	Gln	Ser	Gly	Arg	
				2750					2755					2760		
45	ctg	aag	ttg	gag	aag	agt	ctt	gat	cat	gag	aca	act	aag	tgg	tat	8514
	Leu	Lys	Leu	Glu	Lys	Ser	Leu	Asp	His	Glu	Thr	Thr	Lys	Trp	Tyr	
				2765					2770					2775		
50	cag	ttt	tcc	ata	ctg	gcc	agg	tgc	act	caa	gat	gac	cat	gag	atg	8559
	Gln	Phe	Ser	Ile	Leu	Ala	Arg	Cys	Thr	Gln	Asp	Asp	His	Glu	Met	
				2780					2785					2790		
55	gtg	gct	tct	gta	gat	gtt	agt	atc	caa	gtg	aaa	gat	gca	aat	gac	8604
	Val	Ala	Ser	Val	Asp	Val	Ser	Ile	Gln	Val	Lys	Asp	Ala	Asn	Asp	
				2795					2800					2805		
60	aac	agc	ccg	gtc	ttt	gaa	tct	agt	cca	tat	gag	gca	ttc	att	gtt	8649
	Asn	Ser	Pro	Val	Phe	Glu	Ser	Ser	Pro	Tyr	Glu	Ala	Phe	Ile	Val	
				2810					2815					2820		
	gaa	aac	ctg	cca	ggg	gga	agt	aga	gta	att	cag	atc	agg	gca	tct	8694
	Glu	Asn	Leu	Pro	Gly	Gly	Ser	Arg	Val	Ile	Gln	Ile	Arg	Ala	Ser	
				2825					2830					2835		

		gat gct gac tca	gga acc aac ggc caa	ggt atg tat agc ctg	gat	8739
		Asp Ala Asp Ser	Gly Thr Asn Gly Gln	Val Met Tyr Ser Leu	Asp	
		2840	2845	2850		
5		cag tca caa agt	gtg gaa gtc att	gaa tcc ttt gcc att aac	atg	8784
		Gln Ser Gln Ser	Val Glu Val Ile Glu	Ser Phe Ala Ile Asn	Met	
		2855	2860	2865		
10		gaa aca ggc tgg	att aca act tta aag	gaa ctt gac cat gaa	aag	8829
		Glu Thr Gly Trp	Ile Thr Thr Leu Lys	Glu Leu Asp His Glu	Lys	
		2870	2875	2880		
15		aga gac aat tac	cag att aaa gtg gtt	gca tca gat cat ggt	gaa	8874
		Arg Asp Asn Tyr	Gln Ile Lys Val Val	Ala Ser Asp His Gly	Glu	
		2885	2890	2895		
20		aag atc cag cta	tcc tcc aca gcc att	gtg gat gtt acc gtc	acc	8919
		Lys Ile Gln Leu	Ser Ser Thr Ala Ile	Val Asp Val Thr Val	Thr	
		2900	2905	2910		
		gat gtc aac gat	agt cca cca cga ttc	acg gcc gag atc tat	aaa	8964
		Asp Val Asn Asp	Ser Pro Pro Arg Phe	Thr Ala Glu Ile Tyr	Lys	
		2915	2920	2925		
25		ggg act gtg agt	gag gat gac ccc caa	ggg ggg gtg att gcc	atc	9009
		Gly Thr Val Ser	Glu Asp Asp Pro Gln	Gly Gly Val Ile Ala	Ile	
		2930	2935	2940		
30		tta agt acc acg	gat gct gat tct gaa	gag atc aac aga caa	gtt	9054
		Leu Ser Thr Thr	Asp Ala Asp Ser Glu	Glu Ile Asn Arg Gln	Val	
		2945	2950	2955		
35		aca tat ttc ata	aca gga ggg gat cct	tta gga cag ttt gcc	gtt	9099
		Thr Tyr Phe Ile	Thr Gly Gly Asp Pro	Leu Gly Gln Phe Ala	Val	
		2960	2965	2970		
40		gaa act ata cag	aat gaa tgg aag gta	tat gtg aag aaa cct	cta	9144
		Glu Thr Ile Gln	Asn Glu Trp Lys Val	Tyr Val Lys Lys Pro	Leu	
		2975	2980	2985		
		gac agg gaa aaa	agg gac aat tac ctt	ctt act atc acg gca	act	9189
		Asp Arg Glu Lys	Arg Asp Asn Tyr Leu	Leu Thr Ile Thr Ala	Thr	
		2990	2995	3000		
45		gat ggc acc ttc	tca tca aaa gcg ata	ggt gaa gtg aaa gtt	ctg	9234
		Asp Gly Thr Phe	Ser Ser Lys Ala Ile	Val Glu Val Lys Val	Leu	
		3005	3010	3015		
50		gat gca aat gac	aac agt cca gtt tgt	gaa aag act tta tat	tca	9279
		Asp Ala Asn Asp	Asn Ser Pro Val Cys	Glu Lys Thr Leu Tyr	Ser	
		3020	3025	3030		
55		gac act att cct	gaa gac gtc ctt cct	gga aaa ttg atc atg	cag	9324
		Asp Thr Ile Pro	Glu Asp Val Leu Pro	Gly Lys Leu Ile Met	Gln	
		3035	3040	3045		
60		atc tct gct aca	gac gca gac atc cgc	tct aac gct gaa att	act	9369
		Ile Ser Ala Thr	Asp Ala Asp Ile Arg	Ser Asn Ala Glu Ile	Thr	
		3050	3055	3060		
		tac acg tta ttg	ggg tca ggt gca gaa	aaa ttc aaa cta aat	cca	9414
		Tyr Thr Leu Leu	Gly Ser Gly Ala Glu	Lys Phe Lys Leu Asn	Pro	
		3065	3070	3075		

		gac	aca	ggt	gaa	ctg	aaa	acg	tca	acc	ccc	ctt	gat	cgt	gag	gag	9459
		Asp	Thr	Gly	Glu	Leu	Lys	Thr	Ser	Thr	Pro	Leu	Asp	Arg	Glu	Glu	
					3080					3085					3090		
5		caa	gct	gtt	tat	cat	ctt	ctc	gtc	agg	gcc	aca	gat	gga	gga	gga	9504
		Gln	Ala	Val	Tyr	His	Leu	Leu	Val	Arg	Ala	Thr	Asp	Gly	Gly	Gly	
					3095					3100					3105		
10		aga	ttc	tgc	caa	gcc	agt	att	gtc	gtc	acg	cta	gaa	gat	gtg	aac	9549
		Arg	Phe	Cys	Gln	Ala	Ser	Ile	Val	Val	Thr	Leu	Glu	Asp	Val	Asn	
					3110					3115					3120		
15		gat	aac	gcc	ccc	gaa	ttc	tct	gcc	gat	cct	tat	gcc	atc	acc	gtg	9594
		Asp	Asn	Ala	Pro	Glu	Phe	Ser	Ala	Asp	Pro	Tyr	Ala	Ile	Thr	Val	
					3125					3130					3135		
20		ttt	gaa	aac	aca	gag	ccg	gga	acg	ctg	ctg	aca	aga	gtg	cag	gcc	9639
		Phe	Glu	Asn	Thr	Glu	Pro	Gly	Thr	Leu	Leu	Thr	Arg	Val	Gln	Ala	
					3140					3145					3150		
		aca	gat	gcc	gac	gca	gga	tta	aat	cgg	aag	att	tta	tac	tca	ctg	9684
		Thr	Asp	Ala	Asp	Ala	Gly	Leu	Asn	Arg	Lys	Ile	Leu	Tyr	Ser	Leu	
					3155					3160					3165		
25		att	gac	tct	gct	gat	ggg	cag	ttc	tcc	att	aac	gaa	tta	tct	gga	9729
		Ile	Asp	Ser	Ala	Asp	Gly	Gln	Phe	Ser	Ile	Asn	Glu	Leu	Ser	Gly	
					3170					3175					3180		
30		att	att	cag	tta	gaa	aaa	cct	ttg	gac	aga	gaa	ctc	cag	gca	gta	9774
		Ile	Ile	Gln	Leu	Glu	Lys	Pro	Leu	Asp	Arg	Glu	Leu	Gln	Ala	Val	
					3185					3190					3195		
35		tac	acc	ctc	tct	ttg	aaa	gct	gtg	gat	caa	ggc	ttg	cca	agg	agg	9819
		Tyr	Thr	Leu	Ser	Leu	Lys	Ala	Val	Asp	Gln	Gly	Leu	Pro	Arg	Arg	
					3200					3205					3210		
40		ctg	act	gcc	act	ggc	act	gtg	att	gta	tca	gtt	ctt	gac	ata	aat	9864
		Leu	Thr	Ala	Thr	Gly	Thr	Val	Ile	Val	Ser	Val	Leu	Asp	Ile	Asn	
					3215					3220					3225		
		gac	aac	ccc	cct	gtg	ttt	gag	tac	cgt	gaa	tat	ggt	gcc	acc	gtg	9909
		Asp	Asn	Pro	Pro	Val	Phe	Glu	Tyr	Arg	Glu	Tyr	Gly	Ala	Thr	Val	
					3230					3235					3240		
45		tct	gag	gac	att	ctt	gtt	gga	act	gaa	gtt	ctt	caa	gtg	tat	gca	9954
		Ser	Glu	Asp	Ile	Leu	Val	Gly	Thr	Glu	Val	Leu	Gln	Val	Tyr	Ala	
					3245					3250					3255		
50		gca	agt	cgg	gat	att	gaa	gca	aat	gca	gaa	atc	acc	tac	tca	ata	9999
		Ala	Ser	Arg	Asp	Ile	Glu	Ala	Asn	Ala	Glu	Ile	Thr	Tyr	Ser	Ile	
					3260					3265					3270		
55		ata	agt	gga	aat	gaa	cat	ggg	aaa	ttc	agc	ata	gat	tct	aaa	aca	10044
		Ile	Ser	Gly	Asn	Glu	His	Gly	Lys	Phe	Ser	Ile	Asp	Ser	Lys	Thr	
					3275					3280					3285		
60		ggg	gcc	gta	ttt	atc	att	gag	aat	ctg	gat	tat	gag	agc	tct	cat	10089
		Gly	Ala	Val	Phe	Ile	Ile	Glu	Asn	Leu	Asp	Tyr	Glu	Ser	Ser	His	
					3290					3295					3300		
		gag	tat	tac	cta	aca	gta	gag	gcc	act	gat	gga	ggc	acg	cct	tca	10134
		Glu	Tyr	Tyr	Leu	Thr	Val	Glu	Ala	Thr	Asp	Gly	Gly	Thr	Pro	Ser	
					3305					3310					3315		

## 105

	ctg agc gac gtt gcc act gtg aac gtt aat gta aca gat atc aac	10179
	Leu Ser Asp Val Ala Thr Val Asn Val Asn Val Thr Asp Ile Asn	
	3320 3325 3330	
5	gat aat acc cct gtg ttc agc caa gac acc tac acg aca gtc atc	10224
	Asp Asn Thr Pro Val Phe Ser Gln Asp Thr Tyr Thr Thr Val Ile	
	3335 3340 3345	
10	agt gaa gat gcc gtt ctt gag cag tct gtc atc acg gtt atg gcc	10269
	Ser Glu Asp Ala Val Leu Glu Gln Ser Val Ile Thr Val Met Ala	
	3350 3355 3360	
15	gat gat gcc gat gga cct tcc aac agc cac atc cac tac tca att	10314
	Asp Asp Ala Asp Gly Pro Ser Asn Ser His Ile His Tyr Ser Ile	
	3365 3370 3375	
20	ata gat ggc aac caa gga agc tcg ttc aca att gac ccc gtc agg	10359
	Ile Asp Gly Asn Gln Gly Ser Ser Phe Thr Ile Asp Pro Val Arg	
	3380 3385 3390	
	gga gaa gtc aaa gtg acc aaa ctt ctc gac cga gaa acg att tca	10404
	Gly Glu Val Lys Val Thr Lys Leu Leu Asp Arg Glu Thr Ile Ser	
	3395 3400 3405	
25	ggt tac acg ctc acg gtt caa gct tct gat aat ggc agt cca ccc	10449
	Gly Tyr Thr Leu Thr Val Gln Ala Ser Asp Asn Gly Ser Pro Pro	
	3410 3415 3420	
30	aga gtc aac acg acg acc gtg aac atc gat gtg tcc gat gtc aat	10494
	Arg Val Asn Thr Thr Thr Val Asn Ile Asp Val Ser Asp Val Asn	
	3425 3430 3435	
35	gac aac gcg ccc gtc ttc tcc agg gga aac tac agt gtc att atc	10539
	Asp Asn Ala Pro Val Phe Ser Arg Gly Asn Tyr Ser Val Ile Ile	
	3440 3445 3450	
40	cag gaa aat aag cca gtg ggc ttc agc gtg ctg cag ctg gta gta	10584
	Gln Glu Asn Lys Pro Val Gly Phe Ser Val Leu Gln Leu Val Val	
	3455 3460 3465	
	aca gat gag gat tct tcc cat aac ggt cca ccc ttc ttc ttt act	10629
	Thr Asp Glu Asp Ser Ser His Asn Gly Pro Pro Phe Phe Phe Thr	
	3470 3475 3480	
45	att gta act gga aat gat gag aag gct ttt gaa gtt aac ccg caa	10674
	Ile Val Thr Gly Asn Asp Glu Lys Ala Phe Glu Val Asn Pro Gln	
	3485 3490 3495	
50	gga gtc ctc ctg aca tca tct gcc atc aag agg aag gag aaa gat	10719
	Gly Val Leu Leu Thr Ser Ser Ala Ile Lys Arg Lys Glu Lys Asp	
	3500 3505 3510	
55	cat tac tta ctg cag gtg aag gtg gca gat aat gga aag cct cag	10764
	His Tyr Leu Leu Gln Val Lys Val Ala Asp Asn Gly Lys Pro Gln	
	3515 3520 3525	
	ttg tca tct ttg aca tac att gac att agg gta att gag gag agc	10809
	Leu Ser Ser Leu Thr Tyr Ile Asp Ile Arg Val Ile Glu Glu Ser	
	3530 3535 3540	
60	atc tat ccg cct gcg att ttg ccc ctg gag att ttc atc acc tct	10854
	Ile Tyr Pro Pro Ala Ile Leu Pro Leu Glu Ile Phe Ile Thr Ser	
	3545 3550 3555	

## 106

	tct gga gaa gaa	tac tca ggt ggc gtc	att ggg aag atc cat gcc	10899
	Ser Gly Glu Glu	Tyr Ser Gly Gly Val	Ile Gly Lys Ile His Ala	
	3560	3565	3570	
5	aca gac cag gac	gtg tat gat act cta	acc tac agt ctc gac cct	10944
	Thr Asp Gln Asp	Val Tyr Asp Thr Leu	Thr Tyr Ser Leu Asp Pro	
	3575	3580	3585	
10	cag atg gac aac	ctg ttc tct gtt tcc	agc aca ggg ggc aag ctg	10989
	Gln Met Asp Asn	Leu Phe Ser Val Ser	Ser Thr Gly Gly Lys Leu	
	3590	3595	3600	
15	ata gca cac aaa	aag cta gac ata ggg	caa tac ctt ctc aat gtc	11034
	Ile Ala His Lys	Lys Leu Asp Ile Gly	Gln Tyr Leu Leu Asn Val	
	3605	3610	3615	
20	agc gta aca gat	ggg aag ttc acg acg	gtg gcc gac atc aca gtg	11079
	Ser Val Thr Asp	Gly Lys Phe Thr Thr	Val Ala Asp Ile Thr Val	
	3620	3625	3630	
	cat atc aga caa	gtc aca cag gag atg	ttg aac cac acc atc gcg	11124
	His Ile Arg Gln	Val Thr Gln Glu Met	Leu Asn His Thr Ile Ala	
	3635	3640	3645	
25	atc cgc ttt gcc	aac ctc act ccg gaa	gaa ttc gtt ggt gac tac	11169
	Ile Arg Phe Ala	Asn Leu Thr Pro Glu	Glu Phe Val Gly Asp Tyr	
	3650	3655	3660	
30	tgg cgc aac ttc	cag cga gct tta cgg	aac atc ctg ggt gtg agg	11214
	Trp Arg Asn Phe	Gln Arg Ala Leu Arg	Asn Ile Leu Gly Val Arg	
	3665	3670	3675	
35	agg aac gac ata	cag att gtt agt ttg	cag tcc tct gaa cct cac	11259
	Arg Asn Asp Ile	Gln Ile Val Ser Leu	Gln Ser Ser Glu Pro His	
	3680	3685	3690	
40	cca cat ctg gac	gtc tta ctt ttt gta	gag aaa cca ggt agt gct	11304
	Pro His Leu Asp	Val Leu Leu Phe Val	Glu Lys Pro Gly Ser Ala	
	3695	3700	3705	
	cag atc tca aca	aaa caa ctt ctg cac	aag att aac tct tcc gtg	11349
	Gln Ile Ser Thr	Lys Gln Leu Leu His	Lys Ile Asn Ser Ser Val	
	3710	3715	3720	
45	act gac att gag	gaa atc att gga gtt	agg ata ctg aat gta ttc	11394
	Thr Asp Ile Glu	Glu Ile Ile Gly Val	Arg Ile Leu Asn Val Phe	
	3725	3730	3735	
50	cag aaa ctc tgc	gcg gga ctg gac tgc	ccc tgg aag ttc tgc gat	11439
	Gln Lys Leu Cys	Ala Gly Leu Asp Cys	Pro Trp Lys Phe Cys Asp	
	3740	3745	3750	
55	gaa aag gtg tct	gtg gat gaa agt gtg	atg tca aca cac agc aca	11484
	Glu Lys Val Ser	Val Asp Glu Ser Val	Met Ser Thr His Ser Thr	
	3755	3760	3765	
60	gcc aga ctg agt	ttt gtg act ccc cgc	cac cac agg gca gcg gtg	11529
	Ala Arg Leu Ser	Phe Val Thr Pro Arg	His His Arg Ala Ala Val	
	3770	3775	3780	
	tgt ctc tgc aaa	gag gga agg tgc cca	cct gtc cac cat ggc tgt	11574
	Cys Leu Cys Lys	Glu Gly Arg Cys Pro	Pro Val His His Gly Cys	
	3785	3790	3795	

		gaa Glu	gat Asp	gat Asp	ccg Pro 3800	tgc Cys	cct Pro	gag Glu	gga Gly	tcc Ser 3805	gaa Glu	tgt Cys	gtg Val	tct Ser	gat Asp 3810	ccc Pro	11619
5		tgg Trp	gag Glu	gag Glu	aaa Lys 3815	cac His	acc Thr	tgt Cys	gtc Val	tgt Cys 3820	ccc Pro	agc Ser	ggc Gly	agg Arg	ttt Phe 3825	ggt Gly	11664
10		cag Gln	tgc Cys	cca Pro	ggg Gly 3830	agt Ser	tca Ser	tct Ser	atg Met	aca Thr 3835	ctg Leu	act Thr	gga Gly	aac Asn	agc Ser 3840	tac Tyr	11709
15		gtg Val	aaa Lys	tac Tyr	cgt Arg 3845	ctg Leu	acg Thr	gaa Glu	aat Asn	gaa Glu 3850	aac Asn	aaa Lys	tta Leu	gag Glu	atg Met 3855	aaa Lys	11754
20		ctg Leu	acc Thr	atg Met	agg Arg 3860	ctc Leu	aga Arg	aca Thr	tat Tyr	tcc Ser 3865	acg Thr	cat His	gcg Ala	gtt Val	gtc Val 3870	atg Met	11799
		tat Tyr	gct Ala	cga Arg	gga Gly 3875	act Thr	gac Asp	tat Tyr	agc Ser	atc Ile 3880	ttg Leu	gag Glu	att Ile	cat His	cat His 3885	gga Gly	11844
25		agg Arg	ctg Leu	cag Gln	tac Tyr 3890	aag Lys	ttt Phe	gac Asp	tgt Cys	gga Gly 3895	agt Ser	ggc Gly	cct Pro	gga Gly	att Ile 3900	gtc Val	11889
30		tct Ser	gtt Val	cag Gln	agc Ser 3905	att Ile	cag Gln	gtc Val	aat Asn	gat Asp 3910	ggg Gly	cag Gln	tgg Trp	cac His	gca Ala 3915	gtg Val	11934
35		gcc Ala	ctg Leu	gaa Glu	gtg Val 3920	aat Asn	gga Gly	aac Asn	tat Tyr	gct Ala 3925	cgc Arg	ttg Leu	gtt Val	cta Leu	gac Asp 3930	caa Gln	11979
40		gtt Val	cat His	act Thr	gca Ala 3935	tcg Ser	ggc Gly	aca Thr	gcc Ala	cca Pro 3940	ggg Gly	act Thr	ctg Leu	aaa Lys	acc Thr 3945	ctg Leu	12024
		aac Asn	ctg Leu	gat Asp	aac Asn 3950	tat Tyr	gtg Val	ttt Phe	ttt Phe	ggc Gly 3955	ggc Gly	cac His	atc Ile	cgt Arg	cag Gln 3960	cag Gln	12069
45		gga Gly	aca Thr	agg Arg	cat His 3965	gga Gly	aga Arg	agt Ser	cct Pro	caa Gln 3970	gtt Val	ggc Gly	aat Asn	ggc Gly	ttc Phe 3975	agg Arg	12114
50		ggc Gly	tgt Cys	atg Met	gac Asp 3980	tcc Ser	att Ile	tat Tyr	ttg Leu	aat Asn 3985	ggg Gly	cag Gln	gag Glu	ctc Leu	cct Pro 3990	tta Leu	12159
55		aac Asn	agc Ser	aaa Lys	ccc Pro 3995	aga Arg	agc Ser	tat Tyr	gca Ala	cac His 4000	atc Ile	gaa Glu	gag Glu	tcg Ser	gtg Val 4005	gat Asp	12204
		gta Val	tct Ser	cca Pro	ggc Gly 4010	tgc Cys	ttc Phe	ctg Leu	acg Thr	gcc Ala 4015	acg Thr	gaa Glu	gac Asp	tgc Cys	gcc Ala 4020	agc Ser	12249
60		aac Asn	cct Pro	tgc Cys	cag Gln 4025	aat Asn	gga Gly	ggc Gly	gtt Val	tgc Cys 4030	aat Asn	ccg Pro	tca Ser	cct Pro	gct Ala 4035	gga Gly	12294

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		ggt tat tac tgc	aaa tgc agt gcc ttg	tac ata ggg acc cac tgt	12339
		Gly Tyr Tyr Cys	Lys Cys Ser Ala Leu	Tyr Ile Gly Thr His Cys	
		4040	4045	4050	
5		gag ata agc gtc	aat ccg tgt tcc tcc	aac cca tgc ctc tat ggg	12384
		Glu Ile Ser Val	Asn Pro Cys Ser Ser	Asn Pro Cys Leu Tyr Gly	
		4055	4060	4065	
10		ggc acg tgt gtt	gtc gac aac gga ggc	ttt gtt tgc cag tgt aga	12429
		Gly Thr Cys Val	Val Asp Asn Gly Gly	Phe Val Cys Gln Cys Arg	
		4070	4075	4080	
15		gga tta tat act	ggt cag agg tgt cag	ctt agt cca tac tgc aaa	12474
		Gly Leu Tyr Thr	Gly Gln Arg Cys Gln	Leu Ser Pro Tyr Cys Lys	
		4085	4090	4095	
20		gat gaa ccc tgt	aag aat ggc gga aca	tgc ttt gac agt ttg gat	12519
		Asp Glu Pro Cys	Lys Asn Gly Gly Thr	Cys Phe Asp Ser Leu Asp	
		4100	4105	4110	
		ggc gcc gtt tgt	cag tgt gat tcg ggt	ttt agg gga gaa agg tgt	12564
		Gly Ala Val Cys	Gln Cys Asp Ser Gly	Phe Arg Gly Glu Arg Cys	
		4115	4120	4125	
25		cag agt gat atc	gac gag tgc tct gga	aac cct tgc ctg cac ggg	12609
		Gln Ser Asp Ile	Asp Glu Cys Ser Gly	Asn Pro Cys Leu His Gly	
		4130	4135	4140	
30		gcc ctc tgt gag	aac acg cac ggc tcc	tat cac tgc aac tgc agc	12654
		Ala Leu Cys Glu	Asn Thr His Gly Ser	Tyr His Cys Asn Cys Ser	
		4145	4150	4155	
35		cac gag tac agg	gga cgt cac tgc gag	gat gct gcg ccc aac cag	12699
		His Glu Tyr Arg	Gly Arg His Cys Glu	Asp Ala Ala Pro Asn Gln	
		4160	4165	4170	
40		tat gtg tcc acg	ccg tgg aac att ggg	ttg gcg gaa gga att gga	12744
		Tyr Val Ser Thr	Pro Trp Asn Ile Gly	Leu Ala Glu Gly Ile Gly	
		4175	4180	4185	
		atc gtt gtg ttt	gtt gca ggg ata ttt	tta ctg gtg gtg gtg ttt	12789
		Ile Val Val Phe	Val Ala Gly Ile Phe	Leu Leu Val Val Val Phe	
		4190	4195	4200	
45		gtt ctc tgc cgt	aag atg att agt cgg	aaa aag aag cat cag gct	12834
		Val Leu Cys Arg	Lys Met Ile Ser Arg	Lys Lys Lys His Gln Ala	
		4205	4210	4215	
50		gaa cct aaa gac	aag cac ctg gga ccc	gct acg gct ttc ttg caa	12879
		Glu Pro Lys Asp	Lys His Leu Gly Pro	Ala Thr Ala Phe Leu Gln	
		4220	4225	4230	
55		aga ccg tat ttt	gat tcc aag cta aat	aag aac att tac tca gac	12924
		Arg Pro Tyr Phe	Asp Ser Lys Leu Asn	Lys Asn Ile Tyr Ser Asp	
		4235	4240	4245	
60		ata cca ccc cag	gtg cct gtc cgg cct	att tcc tac acc ccg agt	12969
		Ile Pro Pro Gln	Val Pro Val Arg Pro	Ile Ser Tyr Thr Pro Ser	
		4250	4255	4260	
		att cca agt gac	tca aga aac aat ctg	gac cga aat tcc ttc gaa	13014
		Ile Pro Ser Asp	Ser Arg Asn Asn Leu	Asp Arg Asn Ser Phe Glu	
		4265	4270	4275	



	gga tct gct atc cca gag cat ccc gaa ttc agc act ttt aac ccc	13059
	Gly Ser Ala Ile Pro Glu His Pro Glu Phe Ser Thr Phe Asn Pro	
	4280 4285 4290	
5	gag tct gtg cac ggg cac cga aaa gca gtg gcg gtc tgc agc gtg	13104
	Glu Ser Val His Gly His Arg Lys Ala Val Ala Val Cys Ser Val	
	4295 4300 4305	
10	gcg cca aac ctg cct ccc cca ccc cct tca aac tcc cct tct gac	13149
	Ala Pro Asn Leu Pro Pro Pro Pro Pro Ser Asn Ser Pro Ser Asp	
	4310 4315 4320	
15	agc gac tcc atc cag aag cct agc tgg gac ttt gac tat gac aca	13194
	Ser Asp Ser Ile Gln Lys Pro Ser Trp Asp Phe Asp Tyr Asp Thr	
	4325 4330 4335	
20	aaa gtg gtg gat ctt gat ccc tgt ctt tcc aag aag cct cta gag	13239
	Lys Val Val Asp Leu Asp Pro Cys Leu Ser Lys Lys Pro Leu Glu	
	4340 4345 4350	
	gaa aag cct tcc cag cca tac agt gcc cgg gaa agc ctg tct gaa	13284
	Glu Lys Pro Ser Gln Pro Tyr Ser Ala Arg Glu Ser Leu Ser Glu	
	4355 4360 4365	
25	gtg cag tcc ctg agc tcc ttc cag tcc gaa tcg tgc gat gac aat	13329
	Val Gln Ser Leu Ser Ser Phe Gln Ser Glu Ser Cys Asp Asp Asn	
	4370 4375 4380	
30	ggg tat cac tgg gat aca tca gat tgg atg cca agc gtt cct ctg	13374
	Gly Tyr His Trp Asp Thr Ser Asp Trp Met Pro Ser Val Pro Leu	
	4385 4390 4395	
35	ccg gac ata caa gag ttc ccc aac tat gag gtg att gat gag cag	13419
	Pro Asp Ile Gln Glu Phe Pro Asn Tyr Glu Val Ile Asp Glu Gln	
	4400 4405 4410	
40	aca ccc ctg tac tca gca gat cca aac gcc atc gat acg gac tat	13464
	Thr Pro Leu Tyr Ser Ala Asp Pro Asn Ala Ile Asp Thr Asp Tyr	
	4415 4420 4425	
	tac cct gga ggc tac gac atc gaa agt gat ttt cct cca ccc cca	13509
	Tyr Pro Gly Gly Tyr Asp Ile Glu Ser Asp Phe Pro Pro Pro Pro	
	4430 4435 4440	
45	gaa gac ttc ccc gca gct gat gag cta cca ccg tta ccg ccc gaa	13554
	Glu Asp Phe Pro Ala Ala Asp Glu Leu Pro Pro Leu Pro Pro Glu	
	4445 4450 4455	
50	ttc agc aat cag ttt gaa tcc atc cac cct cct aga gac atg cct	13599
	Phe Ser Asn Gln Phe Glu Ser Ile His Pro Pro Arg Asp Met Pro	
	4460 4465 4470	
55	gcc gcg ggt agc ttg ggt tct tca tca aga aac ccg cag agg ttc	13644
	Ala Ala Gly Ser Leu Gly Ser Ser Ser Arg Asn Arg Gln Arg Phe	
	4475 4480 4485	
60	aac ttg aat cag tat ttg ccc aat ttt tat ccc ctc gat atg tct	13689
	Asn Leu Asn Gln Tyr Leu Pro Asn Phe Tyr Pro Leu Asp Met Ser	
	4490 4495 4500	
	gaa cct caa aca aaa ggc act ggt gag aat agt act tgt aga gaa	13734
	Glu Pro Gln Thr Lys Gly Thr Gly Glu Asn Ser Thr Cys Arg Glu	
	4505 4510 4515	

	ccc cat gcc cct	tac ccg cca ggg tat	caa aga cac ttc gag gcg	13779
	Pro His Ala Pro	Tyr Pro Pro Gly Tyr	Gln Arg His Phe Glu Ala	
	4520	4525	4530	
5	ccc gct gtc gag	agc atg ccc atg tct	gtg tac gcc tcc acc gcc	13824
	Pro Ala Val Glu	Ser Met Pro Met Ser	Val Tyr Ala Ser Thr Ala	
	4535	4540	4545	
10	tcc tgc tct gac	gtg tca gcc tgc tgc	gaa gtg gag tcc gag gtc	13869
	Ser Cys Ser Asp	Val Ser Ala Cys Cys	Glu Val Glu Ser Glu Val	
	4550	4555	4560	
15	atg atg agt gac	tat gag agc ggg gac	gac ggc cac ttc gaa gag	13914
	Met Met Ser Asp	Tyr Glu Ser Gly Asp	Asp Gly His Phe Glu Glu	
	4565	4570	4575	
20	gtg acg atc ccg	ccc ctg gat tcc cag	cag cac acg gaa gtc tga	13959
	Val Thr Ile Pro	Pro Leu Asp Ser Gln	Gln His Thr Glu Val	
	4580	4585	4590	
	ctctcaactc ccccaaaagt	gcctgacttt agtgaaccta	gaggtgatgt gagtaatccg	14019
	cgctgttctt tgcagcagtg	cttccaagct ttttttggtg	agccgaatgg gcatggctgc	14079
25	gctggatcct gcgcctctgg	acgtgctagc catttccagt	gtcccaacta ctgtcatcgt	14139
	gaggttttca tcggctgtgc	catttcccaa cgtcttttgg	gatttacatc tgtctgtgtt	14199
30	aaaataatca aacgaaaaat	cagtcctgtg ttgtcagcat	gattcatgta tttatataga	14259
	tttgattatt ttaattttcc	tgtctctttt ttttgtaaatt	tttatgtaca gatttgattt	14319
	ttcatagttt taactagatt	tccaagatat tttgtgcatt	tgtttcaact gaattttgg	14379
35	ggtgtcagtg ccattatcta	gcaccctgat tttttttttt	ttactataac cagggtttca	14439
	ttctgtcttt ttccactgaa	gtgtgacatt ttgttagtac	atttcagtg agtcattcat	14499
40	ttctagctgt acataggatg	aaggagagat cagatacatg	aacatgtctt acatgggttg	14559
	ctgtatttag aattataaac	atttttcatt attggaaagt	gtaacgggga ccttctgcat	14619
	acctgttttag aacccaaaacc	accatgacac agtttttata	gtgtctgtat atttgtgatg	14679
45	caatggtctt gtaaagggtt	ttaatgaaaa ctaccattag	ccagtctttc ttactgacaa	14739
	taaattatta ataaaat			14756
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	<211> 4590			
	<212> PRT			
	<213> FAT cDNA			
55	<400> 3			
	Met Gly Arg His	Leu Ala Leu Leu Leu Leu Leu Leu Phe Gln		
	1	5	10	15
60	His Phe Gly Asp	Ser Asp Gly Ser Gln Arg Leu Glu Gln Thr Pro Leu		
	20	25	30	

111

Gln Phe Thr His Leu Glu Tyr Asn Val Thr Val Gln Glu Asn Ser Ala  
 35 40 45

5 Ala Lys Thr Tyr Val Gly His Pro Val Lys Met Gly Val Tyr Ile Thr  
 50 55 60

10 His Pro Ala Trp Glu Val Arg Tyr Lys Ile Val Ser Gly Asp Ser Glu  
 65 70 75 80

15 Asn Leu Phe Lys Ala Glu Glu Tyr Ile Leu Gly Asp Phe Cys Phe Leu  
 85 90 95

Arg Ile Arg Thr Lys Gly Gly Asn Thr Ala Ile Leu Asn Arg Glu Val  
 100 105 110

20 Lys Asp His Tyr Thr Leu Ile Val Lys Ala Leu Glu Lys Asn Thr Asn  
 115 120 125

25 Val Glu Ala Arg Thr Lys Val Arg Val Gln Val Leu Asp Thr Asn Asp  
 130 135 140

30 Leu Arg Pro Leu Phe Ser Pro Thr Ser Tyr Ser Val Ser Leu Pro Glu  
 145 150 155 160

35 Asn Thr Ala Ile Arg Thr Ser Ile Ala Arg Val Ser Ala Thr Asp Ala  
 165 170 175

Asp Ile Gly Thr Asn Gly Glu Phe Tyr Tyr Ser Phe Lys Asp Arg Thr  
 180 185 190

40 Asp Met Phe Ala Ile His Pro Thr Ser Gly Val Ile Val Leu Thr Gly  
 195 200 205

45 Arg Leu Asp Tyr Leu Glu Thr Lys Leu Tyr Glu Met Glu Ile Leu Ala  
 210 215 220

50 Ala Asp Arg Gly Met Lys Leu Tyr Gly Ser Ser Gly Ile Ser Ser Met  
 225 230 235 240

55 Ala Lys Leu Thr Val His Ile Glu Gln Ala Asn Glu Cys Ala Pro Val  
 245 250 255

Ile Thr Ala Val Thr Leu Ser Pro Ser Glu Leu Asp Arg Asp Pro Ala  
 260 265 270

60 Tyr Ala Ile Val Thr Val Asp Asp Cys Asp Gln Gly Ala Asn Gly Asp  
 275 280 285

112

Ile Ala Ser Leu Ser Ile Val Ala Gly Asp Leu Leu Gln Gln Phe Arg  
 290 295 300

5 Thr Val Arg Ser Phe Pro Gly Ser Lys Glu Tyr Lys Val Lys Ala Ile  
 305 310 315 320

10 Gly Asp Ile Asp Trp Asp Ser His Pro Phe Gly Tyr Asn Leu Thr Leu  
 325 330 335

15 Gln Ala Lys Asp Lys Gly Thr Pro Pro Gln Phe Ser Ser Val Lys Val  
 340 345 350

Ile His Val Thr Ser Pro Gln Phe Lys Ala Gly Pro Val Lys Phe Glu  
 355 360 365

20 Lys Asp Val Tyr Arg Ala Glu Ile Ser Glu Phe Ala Pro Pro Asn Thr  
 370 375 380

25 Pro Val Val Met Val Lys Ala Ile Pro Ala Tyr Ser His Leu Arg Tyr  
 385 390 395 400

30 Val Phe Lys Arg Thr Pro Gly Lys Ala Lys Phe Ser Leu Asn Tyr Asn  
 405 410 415

35 Thr Gly Leu Ile Ser Ile Leu Glu Pro Val Lys Arg Gln Gln Ala Ala  
 420 425 430

His Phe Glu Leu Glu Val Thr Thr Ser Asp Arg Lys Ala Ser Thr Lys  
 435 440 445

40 Val Leu Val Lys Val Leu Gly Ala Asn Ser Asn Pro Pro Glu Phe Thr  
 450 455 460

45 Gln Thr Ala Tyr Lys Ala Ala Phe Asp Glu Asn Val Pro Ile Gly Thr  
 465 470 475 480

50 Thr Ile Met Ser Leu Ser Ala Val Asp Pro Asp Glu Gly Glu Asn Gly  
 485 490 495

55 Tyr Val Thr Tyr Ser Ile Ala Asn Leu Asn His Val Pro Phe Ala Ile  
 500 505 510

Asp His Phe Thr Gly Ala Val Ser Thr Ser Glu Asn Leu Asp Tyr Glu  
 515 520 525

60 Leu Met Pro Arg Val Tyr Thr Leu Arg Ile Arg Ala Ser Asp Trp Gly  
 530 535 540

113

	Leu	Pro	Tyr	Arg	Arg	Glu	Val	Glu	Val	Leu	Ala	Thr	Ile	Thr	Leu	Asn
	545					550					555					560
5	Asn	Leu	Asn	Asp	Asn	Thr	Pro	Leu	Phe	Glu	Lys	Ile	Asn	Cys	Glu	Gly
					565					570					575	
10	Thr	Ile	Pro	Arg	Asp	Leu	Gly	Val	Gly	Glu	Gln	Ile	Thr	Thr	Val	Ser
				580					585						590	
15	Ala	Ile	Asp	Ala	Asp	Glu	Leu	Gln	Leu	Val	Gln	Tyr	Gln	Ile	Glu	Ala
			595					600					605			
	Gly	Asn	Glu	Leu	Asp	Leu	Phe	Ser	Leu	Asn	Pro	Asn	Ser	Gly	Val	Leu
		610					615					620				
20	Ser	Leu	Lys	Arg	Ser	Leu	Met	Asp	Gly	Leu	Gly	Ala	Lys	Val	Ser	Phe
	625					630					635					640
25	His	Ser	Leu	Arg	Ile	Thr	Ala	Thr	Asp	Gly	Glu	Asn	Phe	Ala	Thr	Pro
					645					650					655	
30	Leu	Tyr	Ile	Asn	Ile	Thr	Val	Ala	Ala	Ser	His	Lys	Leu	Val	Asn	Leu
				660					665						670	
35	Gln	Cys	Glu	Glu	Thr	Gly	Val	Ala	Lys	Met	Leu	Ala	Glu	Lys	Leu	Leu
			675					680					685			
	Gln	Ala	Asn	Lys	Leu	His	Asn	Gln	Gly	Glu	Val	Glu	Asp	Ile	Phe	Phe
		690					695					700				
40	Asp	Ser	His	Ser	Val	Asn	Ala	His	Ile	Pro	Gln	Phe	Arg	Ser	Thr	Leu
	705					710					715					720
45	Pro	Thr	Gly	Ile	Gln	Val	Lys	Glu	Asn	Gln	Pro	Val	Gly	Ser	Ser	Val
					725					730					735	
50	Ile	Phe	Met	Asn	Ser	Thr	Asp	Leu	Asp	Thr	Gly	Phe	Asn	Gly	Lys	Leu
				740					745					750		
55	Val	Tyr	Ala	Val	Ser	Gly	Gly	Asn	Glu	Asp	Ser	Cys	Phe	Met	Ile	Asp
			755					760					765			
	Met	Glu	Thr	Gly	Met	Leu	Lys	Ile	Leu	Ser	Pro	Leu	Asp	Arg	Glu	Thr
		770					775					780				
60	Thr	Asp	Lys	Tyr	Thr	Leu	Asn	Ile	Thr	Val	Tyr	Asp	Leu	Gly	Ile	Pro
	785					790					795					800

114

Gln Lys Ala Ala Trp Arg Leu Leu His Val Val Val Val Asp Ala Asn  
 805 810 815

5 Asp Asn Pro Pro Glu Phe Leu Gln Glu Ser Tyr Phe Val Glu Val Ser  
 820 825 830

10 Glu Asp Lys Glu Val His Ser Glu Ile Ile Gln Val Glu Ala Thr Asp  
 835 840 845

15 Lys Asp Leu Gly Pro Asn Gly His Val Thr Tyr Ser Ile Leu Thr Asp  
 850 855 860

Thr Asp Thr Phe Ser Ile Asp Ser Val Thr Gly Val Val Asn Ile Ala  
 865 870 875 880

20 Arg Pro Leu Asp Arg Glu Leu Gln His Glu His Ser Leu Lys Ile Glu  
 885 890 895

25 Ala Arg Asp Gln Ala Arg Glu Glu Pro Gln Leu Phe Ser Thr Val Val  
 900 905 910

30 Val Lys Val Ser Leu Glu Asp Val Asn Asp Asn Pro Pro Thr Phe Ile  
 915 920 925

35 Pro Pro Asn Tyr Arg Val Lys Val Arg Glu Asp Leu Pro Glu Gly Thr  
 930 935 940

Val Ile Met Trp Leu Glu Ala His Asp Pro Asp Leu Gly Gln Ser Gly  
 945 950 955 960

40 Gln Val Arg Tyr Ser Leu Leu Asp His Gly Glu Gly Asn Phe Asp Val  
 965 970 975

45 Asp Lys Leu Ser Gly Ala Val Arg Ile Val Gln Gln Leu Asp Phe Glu  
 980 985 990

50 Lys Lys Gln Val Tyr Asn Leu Thr Val Arg Ala Lys Asp Lys Gly Lys  
 995 1000 1005

55 Pro Val Ser Leu Ser Ser Thr Cys Tyr Val Glu Val Glu Val Val  
 1010 1015 1020

Asp Val Asn Glu Asn Leu His Pro Pro Val Phe Ser Ser Phe Val  
 1025 1030 1035

60 Glu Lys Gly Thr Val Lys Glu Asp Ala Pro Val Gly Ser Leu Val  
 1040 1045 1050

## 115

	Met	Thr	Val	Ser	Ala	His	Asp	Glu	Asp	Ala	Gly	Arg	Asp	Gly	Glu
	1055						1060					1065			
5	Ile	Arg	Tyr	Ser	Ile	Arg	Asp	Gly	Ser	Gly	Val	Gly	Val	Phe	Lys
	1070						1075					1080			
10	Ile	Gly	Glu	Glu	Thr	Gly	Val	Ile	Glu	Thr	Ser	Asp	Arg	Leu	Asp
	1085						1090					1095			
15	Arg	Glu	Ser	Thr	Ser	His	Tyr	Trp	Leu	Thr	Val	Phe	Ala	Thr	Asp
	1100						1105					1110			
20	Gln	Gly	Val	Val	Pro	Leu	Ser	Ser	Phe	Ile	Glu	Ile	Tyr	Ile	Glu
	1115						1120					1125			
25	Val	Glu	Asp	Val	Asn	Asp	Asn	Ala	Pro	Gln	Thr	Ser	Glu	Pro	Val
	1130						1135					1140			
30	Tyr	Tyr	Pro	Glu	Ile	Met	Glu	Asn	Ser	Pro	Lys	Asp	Val	Ser	Val
	1145						1150					1155			
35	Val	Gln	Ile	Glu	Ala	Phe	Asp	Pro	Asp	Ser	Ser	Ser	Asn	Asp	Lys
	1160						1165					1170			
40	Leu	Met	Tyr	Lys	Ile	Thr	Ser	Gly	Asn	Pro	Gln	Gly	Phe	Phe	Ser
	1175						1180					1185			
45	Ile	His	Pro	Lys	Thr	Gly	Leu	Ile	Thr	Thr	Thr	Ser	Arg	Lys	Leu
	1190						1195					1200			
50	Asp	Arg	Glu	Gln	Gln	Asp	Glu	His	Ile	Leu	Glu	Val	Thr	Val	Thr
	1205						1210					1215			
55	Asp	Asn	Gly	Ser	Pro	Pro	Lys	Ser	Thr	Ile	Ala	Arg	Val	Ile	Val
	1220						1225					1230			
60	Lys	Ile	Leu	Asp	Glu	Asn	Asp	Asn	Lys	Pro	Gln	Phe	Leu	Gln	Lys
	1235						1240					1245			
65	Phe	Tyr	Lys	Ile	Arg	Leu	Pro	Glu	Arg	Glu	Lys	Pro	Asp	Arg	Glu
	1250						1255					1260			
70	Arg	Asn	Ala	Arg	Arg	Glu	Pro	Leu	Tyr	Arg	Val	Ile	Ala	Thr	Asp
	1265						1270					1275			
75	Lys	Asp	Glu	Gly	Pro	Asn	Ala	Glu	Ile	Ser	Tyr	Ser	Ile	Glu	Asp
	1280						1285					1290			

	Gly	Asn	Glu	His	Gly	Lys	Phe	Phe	Ile	Glu	Pro	Lys	Thr	Gly	Val
	1295						1300					1305			
5	Val	Ser	Ser	Lys	Arg	Phe	Ser	Ala	Ala	Gly	Glu	Tyr	Asp	Ile	Leu
	1310						1315					1320			
10	Ser	Ile	Lys	Ala	Val	Asp	Asn	Gly	Arg	Pro	Gln	Lys	Ser	Ser	Thr
	1325						1330					1335			
15	Thr	Arg	Leu	His	Ile	Glu	Trp	Ile	Ser	Lys	Pro	Lys	Gln	Ser	Leu
	1340						1345					1350			
	Glu	Pro	Ile	Ser	Phe	Glu	Glu	Ser	Phe	Phe	Thr	Phe	Thr	Val	Met
	1355						1360					1365			
20	Glu	Ser	Asp	Pro	Val	Ala	His	Met	Ile	Gly	Val	Ile	Ser	Val	Glu
	1370						1375					1380			
25	Pro	Pro	Gly	Ile	Pro	Leu	Trp	Phe	Asp	Ile	Thr	Gly	Gly	Asn	Tyr
	1385						1390					1395			
30	Asp	Ser	His	Phe	Asp	Val	Asp	Lys	Gly	Thr	Gly	Thr	Ile	Ile	Val
	1400						1405					1410			
35	Ala	Lys	Pro	Leu	Asp	Ala	Glu	Gln	Lys	Ser	Asn	Tyr	Asn	Leu	Thr
	1415						1420					1425			
	Val	Glu	Ala	Thr	Asp	Gly	Thr	Thr	Thr	Ile	Leu	Thr	Gln	Val	Phe
	1430						1435					1440			
40	Ile	Lys	Val	Ile	Asp	Thr	Asn	Asp	His	Arg	Pro	Gln	Phe	Ser	Thr
	1445						1450					1455			
45	Ser	Lys	Tyr	Glu	Val	Val	Ile	Pro	Glu	Asp	Thr	Ala	Pro	Glu	Thr
	1460						1465					1470			
50	Glu	Ile	Leu	Gln	Ile	Ser	Ala	Val	Asp	Gln	Asp	Glu	Lys	Asn	Lys
	1475						1480					1485			
55	Leu	Ile	Tyr	Thr	Leu	Gln	Ser	Ser	Arg	Asp	Pro	Leu	Ser	Leu	Lys
	1490						1495					1500			
	Lys	Phe	Arg	Leu	Asp	Pro	Ala	Thr	Gly	Ser	Leu	Tyr	Thr	Ser	Glu
	1505						1510					1515			
60	Lys	Leu	Asp	His	Glu	Ala	Val	Ser	Pro	Ala	His	Leu	Thr	Val	Met
	1520						1525					1530			



	Val	Arg	Asp	Gln	Asp	Val	Pro	Val	Lys	Arg	Asn	Phe	Ala	Arg	Ile
	1535						1540					1545			
5	Val	Val	Asn	Val	Ser	Asp	Thr	Asn	Asp	His	Ala	Pro	Trp	Phe	Thr
	1550						1555					1560			
10	Ala	Ser	Ser	Tyr	Lys	Gly	Arg	Val	Tyr	Glu	Ser	Ala	Ala	Val	Gly
	1565						1570					1575			
15	Ser	Val	Val	Leu	Gln	Val	Thr	Ala	Leu	Asp	Lys	Asp	Lys	Gly	Lys
	1580						1585					1590			
	Asn	Ala	Glu	Val	Leu	Tyr	Ser	Ile	Glu	Ser	Gly	Asn	Ile	Gly	Asn
	1595						1600					1605			
20	Ile	Gly	Asn	Ser	Phe	Met	Ile	Asp	Pro	Val	Leu	Gly	Ser	Ile	Lys
	1610						1615					1620			
25	Thr	Ala	Lys	Glu	Leu	Asp	Arg	Ser	Asn	Gln	Ala	Glu	Tyr	Asp	Leu
	1625						1630					1635			
30	Met	Val	Lys	Ala	Thr	Asp	Lys	Gly	Ser	Pro	Pro	Met	Ser	Glu	Ile
	1640						1645					1650			
35	Thr	Ser	Val	Arg	Ile	Phe	Val	Thr	Ile	Ala	Asp	Asn	Ala	Ser	Pro
	1655						1660					1665			
	Lys	Phe	Thr	Ser	Lys	Glu	Tyr	Ser	Val	Glu	Leu	Ser	Glu	Thr	Val
	1670						1675					1680			
40	Ser	Ile	Gly	Ser	Phe	Val	Gly	Met	Val	Thr	Ala	His	Ser	Gln	Ser
	1685						1690					1695			
45	Ser	Val	Val	Tyr	Glu	Ile	Lys	Asp	Gly	Asn	Thr	Gly	Asp	Ala	Phe
	1700						1705					1710			
50	Asp	Ile	Asn	Pro	His	Ser	Gly	Thr	Ile	Ile	Thr	Gln	Lys	Ala	Leu
	1715						1720					1725			
55	Asp	Phe	Glu	Thr	Leu	Pro	Ile	Tyr	Thr	Leu	Ile	Ile	Gln	Gly	Thr
	1730						1735					1740			
	Asn	Met	Ala	Gly	Leu	Ser	Thr	Asn	Thr	Thr	Val	Leu	Val	His	Leu
	1745						1750					1755			
60	Gln	Asp	Glu	Asn	Asp	Asn	Ala	Pro	Val	Phe	Met	Gln	Ala	Glu	Tyr
	1760						1765					1770			

	Thr	Gly	Leu	Ile	Ser	Glu	Ser	Ala	Ser	Ile	Asn	Ser	Val	Val	Leu	
	1775						1780					1785				
5	Thr	Asp	Arg	Asn	Val	Pro	Leu	Val	Ile	Arg	Ala	Ala	Asp	Ala	Asp	
	1790						1795					1800				
10	Lys	Asp	Ser	Asn	Ala	Leu	Leu	Val	Tyr	His	Ile	Val	Glu	Pro	Ser	
	1805						1810					1815				
15	Val	His	Thr	Tyr	Phe	Ala	Ile	Asp	Ser	Ser	Thr	Gly	Ala	Ile	His	1820
	1825					1830										
	Thr	Val	Leu	Ser	Leu	Asp	Tyr	Glu	Glu	Thr	Ser	Ile	Phe	His	Phe	
	1835						1840					1845				
20	Thr	Val	Gln	Val	His	Asp	Met	Gly	Thr	Pro	Arg	Leu	Phe	Ala	Glu	
	1850						1855					1860				
25	Tyr	Ala	Ala	Asn	Val	Thr	Val	His	Val	Ile	Asp	Ile	Asn	Asp	Cys	
	1865						1870					1875				
30	Pro	Pro	Val	Phe	Ala	Lys	Pro	Leu	Tyr	Glu	Ala	Ser	Leu	Leu	Leu	
	1880						1885					1890				
35	Pro	Thr	Tyr	Lys	Gly	Val	Lys	Val	Ile	Thr	Val	Asn	Ala	Thr	Asp	
	1895						1900					1905				
	Ala	Asp	Ser	Ser	Ala	Phe	Ser	Gln	Leu	Ile	Tyr	Ser	Ile	Thr	Glu	
	1910						1915					1920				
40	Gly	Asn	Ile	Gly	Glu	Lys	Phe	Ser	Met	Asp	Tyr	Lys	Thr	Gly	Ala	
	1925						1930					1935				
45	Leu	Thr	Val	Gln	Asn	Thr	Thr	Gln	Leu	Arg	Ser	Arg	Tyr	Glu	Leu	
	1940						1945					1950				
50	Thr	Val	Arg	Ala	Ser	Asp	Gly	Arg	Phe	Ala	Gly	Leu	Thr	Ser	Val	
	1955						1960					1965				
55	Lys	Ile	Asn	Val	Lys	Glu	Ser	Lys	Glu	Ser	His	Leu	Lys	Phe	Thr	
	1970						1975					1980				
	Gln	Asp	Val	Tyr	Ser	Ala	Val	Val	Lys	Glu	Asn	Ser	Thr	Glu	Ala	
	1985						1990					1995				
60	Glu	Thr	Leu	Ala	Val	Ile	Thr	Ala	Ile	Gly	Ser	Pro	Ile	Asn	Glu	
	2000						2005					2010				

	Pro	Leu	Phe	Tyr	His	Ile	Leu	Asn	Pro	Asp	Arg	Arg	Phe	Lys	Ile
	2015						2020					2025			
5	Ser	Arg	Thr	Ser	Gly	Val	Leu	Ser	Thr	Thr	Gly	Thr	Pro	Phe	Asp
	2030						2035					2040			
10	Arg	Glu	Gln	Gln	Glu	Ala	Phe	Asp	Val	Val	Val	Glu	Val	Ile	Glu
	2045						2050					2055			
15	Glu	His	Lys	Pro	Ser	Ala	Val	Ala	His	Val	Val	Val	Lys	Val	Ile
	2060						2065					2070			
	Val	Glu	Asp	Gln	Asn	Asp	Asn	Ala	Pro	Val	Phe	Val	Asn	Leu	Pro
	2075						2080					2085			
20	Tyr	Tyr	Ala	Val	Val	Lys	Val	Asp	Thr	Glu	Val	Gly	His	Val	Ile
	2090						2095					2100			
25	Arg	Tyr	Val	Thr	Ala	Val	Asp	Arg	Asp	Ser	Gly	Arg	Asn	Gly	Glu
	2105						2110					2115			
30	Val	His	Tyr	Tyr	Leu	Lys	Glu	His	His	Glu	His	Phe	Gln	Ile	Gly
	2120						2125					2130			
35	Pro	Leu	Gly	Glu	Ile	Ser	Leu	Lys	Lys	Gln	Phe	Glu	Leu	Asp	Thr
	2135						2140					2145			
	Leu	Asn	Lys	Glu	Tyr	Leu	Val	Thr	Val	Val	Ala	Lys	Asp	Gly	Gly
	2150						2155					2160			
40	Asn	Pro	Ala	Phe	Ser	Ala	Glu	Val	Ile	Val	Pro	Ile	Thr	Val	Met
	2165						2170					2175			
45	Asn	Lys	Ala	Met	Pro	Val	Phe	Glu	Lys	Pro	Phe	Tyr	Ser	Ala	Glu
	2180						2185					2190			
50	Ile	Ala	Glu	Ser	Ile	Gln	Val	His	Ser	Pro	Val	Val	His	Val	Gln
	2195						2200					2205			
55	Ala	Asn	Ser	Pro	Glu	Gly	Leu	Lys	Val	Phe	Tyr	Ser	Ile	Thr	Asp
	2210						2215					2220			
	Gly	Asp	Pro	Phe	Ser	Gln	Phe	Thr	Ile	Asn	Phe	Asn	Thr	Gly	Val
	2225						2230					2235			
60	Ile	Asn	Val	Ile	Ala	Pro	Leu	Asp	Phe	Glu	Ala	His	Pro	Ala	Tyr
	2240						2245					2250			

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	Lys	Leu	Ser	Ile	Arg	Ala	Thr	Asp	Ser	Leu	Thr	Gly	Ala	His	Ala
	2255						2260					2265			
5	Glu	Val	Phe	Val	Asp	Ile	Ile	Val	Asp	Asp	Ile	Asn	Asp	Asn	Pro
	2270						2275					2280			
10	Pro	Val	Phe	Ala	Gln	Gln	Ser	Tyr	Ala	Val	Thr	Leu	Ser	Glu	Ala
	2285						2290					2295			
15	Ser	Val	Ile	Gly	Thr	Ser	Val	Val	Gln	Val	Arg	Ala	Thr	Asp	Ser
	2300						2305					2310			
	Asp	Ser	Glu	Pro	Asn	Arg	Gly	Ile	Ser	Tyr	Gln	Met	Phe	Gly	Asn
	2315						2320					2325			
20	His	Ser	Lys	Ser	His	Asp	His	Phe	His	Val	Asp	Ser	Ser	Thr	Gly
	2330						2335					2340			
25	Leu	Ile	Ser	Leu	Leu	Arg	Thr	Leu	Asp	Tyr	Glu	Gln	Ser	Arg	Gln
	2345						2350					2355			
30	His	Thr	Ile	Phe	Val	Arg	Ala	Val	Asp	Gly	Gly	Met	Pro	Thr	Leu
	2360						2365					2370			
35	Ser	Ser	Asp	Val	Ile	Val	Thr	Val	Asp	Val	Thr	Asp	Leu	Asn	Gly
	2375						2380					2385			
	Asn	Pro	Pro	Leu	Phe	Glu	Gln	Gln	Ile	Tyr	Glu	Ala	Arg	Ile	Ser
	2390						2395					2400			
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	2405						2410					2415			
45	Asp	Ala	Asp	Ser	Ser	Asp	Ile	Asp	Lys	Leu	Gln	Tyr	Ser	Ile	Leu
	2420						2425					2430			
50	Ser	Gly	Asn	Asp	His	Lys	His	Phe	Val	Ile	Asp	Ser	Ala	Thr	Gly
	2435						2440					2445			
55	Ile	Ile	Thr	Leu	Ser	Asn	Leu	His	Arg	His	Ala	Leu	Lys	Pro	Phe
	2450						2455					2460			
	Tyr	Ser	Leu	Asn	Leu	Ser	Val	Ser	Asp	Gly	Val	Phe	Arg	Ser	Ser
	2465						2470					2475			
60	Thr	Gln	Val	His	Val	Thr	Val	Ile	Gly	Gly	Asn	Leu	His	Ser	Pro
	2480						2485					2490			

	Ala	Phe	Leu	Gln	Asn	Glu	Tyr	Glu	Val	Glu	Leu	Ala	Glu	Asn	Ala
	2495						2500					2505			
5	Pro	Leu	His	Thr	Leu	Val	Met	Glu	Val	Lys	Thr	Thr	Asp	Gly	Asp
	2510						2515					2520			
10	Ser	Gly	Ile	Tyr	Gly	His	Val	Thr	Tyr	His	Ile	Val	Asn	Asp	Phe
	2525						2530					2535			
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	2540						2545					2550			
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	2570						2575					2580			
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	2630						2635					2640			
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	2660						2665					2670			
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	2675						2680					2685			
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	2690						2695					2700			
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	2750						2755					2760			
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	cgggtgagct ccacgagagc gccgtcgcca cttcggggcca actttgcgat tcccgcagct	180
	taagca atg ggg aga cat ttg gct ttg ctc ctg ctt ctg ctc ctt ctc	228
5	Met Gly Arg His Leu Ala Leu Leu Leu Leu Leu Leu Leu	
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	Phe Gln His Phe Gly Asp Ser Asp Gly Ser Gln Arg Leu Glu Gln Thr	
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5	ccg gtg ata aca gca gtg aca ttg tca cca tca gaa ctg gac agg gac Pro Val Ile Thr Ala Val Thr Leu Ser Pro Ser Glu Leu Asp Arg Asp 255 260 265 270	996		
10	cca gca tat gca att gtg aca gtg gat gac tgc gat cag ggt gcc aat Pro Ala Tyr Ala Ile Val Thr Val Asp Cys Asp Gln Gly Ala Asn 275 280 285	1044		
15	ggt gac ata gca tct tta agc atc gtg gca ggt gac ctt ctc cag cag Gly Asp Ile Ala Ser Leu Ser Ile Val Ala Gly Asp Leu Leu Gln Gln 290 295 300	1092		
20	ttt aga aca gtg agg tcc ttt cca ggg agt aag gag tat aaa gtc aaa Phe Arg Thr Val Arg Ser Phe Pro Gly Ser Lys Glu Tyr Lys Val Lys 305 310 315	1140		
25	gcc atc ggt gac att gat tgg gac agt cat cct ttc ggc tac aat ctc Ala Ile Gly Asp Ile Asp Trp Asp Ser His Pro Phe Gly Tyr Asn Leu 320 325 330	1188		
30	aca cta cag gct aaa gat aaa gga act ccg ccc cag ttc tct tct gtt Thr Leu Gln Ala Lys Asp Lys Gly Thr Pro Pro Gln Phe Ser Ser Val 335 340 345 350	1236		
35	aaa gtc att cac gtg act tct cca cag ttc aaa gcc ggg cca gtc aag Lys Val Ile His Val Thr Ser Pro Gln Phe Lys Ala Gly Pro Val Lys 355 360 365	1284		
40	ttt gaa aag gat gtt tac aga gca gaa ata agt gaa ttt gct cct ccc Phe Glu Lys Asp Val Tyr Arg Ala Glu Ile Ser Glu Phe Ala Pro Pro 370 375 380	1332		
45	aac aca cct gtg gtc atg gta aag gcc att cct gct tat tcc cat ttg Asn Thr Pro Val Val Met Val Lys Ala Ile Pro Ala Tyr Ser His Leu 385 390 395	1380		
50	agg tat gtt ttt aaa agg aca cct gga aaa gct aaa ttc agt tta aat Arg Tyr Val Phe Lys Arg Thr Pro Gly Lys Ala Lys Phe Ser Leu Asn 400 405 410	1428		
55	tac aac act ggt ctc att tct att tta gaa cca gtt aaa aga cag cag Tyr Asn Thr Gly Leu Ile Ser Ile Leu Glu Pro Val Lys Arg Gln Gln 415 420 425 430	1476		
60	gca gcc cat ttt gaa ctt gaa gta aca aca agt gac aga aaa gcg tcc Ala Ala His Phe Glu Leu Glu Val Thr Thr Ser Asp Arg Lys Ala Ser 435 440 445	1524		
65	acc aag gtc ttg gtg aaa gtc tta ggt gca aat agc aat ccc cct gaa Thr Lys Val Leu Val Lys Val Leu Gly Ala Asn Ser Asn Pro Pro Glu 450 455 460	1572		
70	ttt acc cag aca gcg tac aaa gct gct ttt gat gag aac gtg ccc att Phe Thr Gln Thr Ala Tyr Lys Ala Ala Phe Asp Glu Asn Val Pro Ile 465 470 475	1620		
75	ggt act act atc atg agc ctg agt gcc gta gac cct gat gag ggt gag Gly Thr Thr Ile Met Ser Leu Ser Ala Val Asp Pro Asp Glu Gly Glu 480 485 490	1668		
80	aat ggg tac gtg aca tac agt atc gca aat tta aat cat gtg ccg ttt Asn Gly Tyr Val Thr Tyr Ser Ile Ala Asn Leu Asn His Val Pro Phe	1716		

	495		500		505		510	
5	gcg att gac cat ttc act ggt gcc gtg agt acg tca gaa aac ctg gac Ala Ile Asp His Phe Thr Gly Ala Val Ser Thr Ser Glu Asn Leu Asp	1764	515	520	525			
10	tac gaa ctg atg cct cgg gtt tat act ctg agg att cgt gca tca gac Tyr Glu Leu Met Pro Arg Val Tyr Thr Leu Arg Ile Arg Ala Ser Asp	1812	530	535	540			
15	tgg ggc ttg ccg tac cgc cgg gaa gtc gaa gtc ctt gct aca att act Trp Gly Leu Pro Tyr Arg Arg Glu Val Glu Val Leu Ala Thr Ile Thr	1860	545	550	555			
20	ctc aat aac ttg aat gac aac aca cct ttg ttt gag aaa ata aat tgt Leu Asn Asn Leu Asn Asp Asn Thr Pro Leu Phe Glu Lys Ile Asn Cys	1908	560	565	570			
25	gaa ggg aca att ccc aga gat cta ggc gtg gga gag caa ata acc act Glu Gly Thr Ile Pro Arg Asp Leu Gly Val Gly Glu Gln Ile Thr Thr	1956 575	580	585	590			
30	gtt tct gct att gat gca gat gaa ctt cag ttg gta cag tat cag att Val Ser Ala Ile Asp Ala Asp Glu Leu Gln Leu Val Gln Tyr Gln Ile	2004	595	600	605			
35	gaa gct gga aat gaa ctg gat ttg ttt agt tta aac ccc aac tcg ggg Glu Ala Gly Asn Glu Leu Asp Leu Phe Ser Leu Asn Pro Asn Ser Gly	2052	610	615	620			
40	gta ttg tca tta aag cga tcg cta atg gat ggc tta ggt gca aag gtg Val Leu Ser Leu Lys Arg Ser Leu Met Asp Gly Leu Gly Ala Lys Val	2100	625	630	635			
45	tct ttc cac agt ctg aga atc aca gct aca gat gga gaa aat ttt gcc Ser Phe His Ser Leu Arg Ile Thr Ala Thr Asp Gly Glu Asn Phe Ala	2148	640	645	650			
50	aca cca tta tat atc aac ata aca gtg gct gcc agt cac aag ctg gta Thr Pro Leu Tyr Ile Asn Ile Thr Val Ala Ala Ser His Lys Leu Val	2196	655	660	665			670
55	aac ttg cag tgt gaa gag act ggt gtt gcc aaa atg ctg gca gag aag Asn Leu Gln Cys Glu Glu Thr Gly Val Ala Lys Met Leu Ala Glu Lys	2244	675	680	685			
60	ctc ctg cag gca aat aaa tta cac aac cag gga gag gtg gag gat att Leu Leu Gln Ala Asn Lys Leu His Asn Gln Gly Glu Val Glu Asp Ile	2292	690	695	700			
65	ttc ttc gat tct cac tct gtc aat gct cac ata ccg cag ttt aga agc Phe Phe Asp Ser His Ser Val Asn Ala His Ile Pro Gln Phe Arg Ser	2340	705	710	715			
70	act ctt ccg act ggt att cag gta aag gaa aac cag cct gtg ggt tcc Thr Leu Pro Thr Gly Ile Gln Val Lys Glu Asn Gln Pro Val Gly Ser	2388	720	725	730			
75	agt gta att ttc atg aac tcc act gac ctt gac act ggc ttc aat gga Ser Val Ile Phe Met Asn Ser Thr Asp Leu Asp Thr Gly Phe Asn Gly	2436	735	740	745			750
80	aaa ctg gtc tat gct gtt tct gga gga aat gag gat agt tgc ttc atg Lys Leu Val Tyr Ala Val Ser Gly Gly Asn Glu Asp Ser Cys Phe Met	2484						



	755	760	765	
5	att gat atg gaa aca gga atg ctg aaa att tta tct cct ctt gac cgt Ile Asp Met Glu Thr Gly Met Leu Lys Ile Leu Ser Pro Leu Asp Arg 770 775 780			2532
10	gaa aca aca gac aaa tac acc ctg aat att acc gtc tat gac ctt ggg Glu Thr Thr Asp Lys Tyr Thr Leu Asn Ile Thr Val Tyr Asp Leu Gly 785 790 795			2580
15	ata ccc cag aag gct gcg tgg cgt ctt cta cat gtc gtg gtt gtc gat Ile Pro Gln Lys Ala Ala Trp Arg Leu Leu His Val Val Val Val Asp 800 805 810			2628
20	gcc aat gat aat cca ccc gag ttt tta cag gag agc tat ttt gtg gaa Ala Asn Asp Asn Pro Pro Glu Phe Leu Gln Glu Ser Tyr Phe Val Glu 815 820 825 830			2676
25	gtg agt gaa gac aag gag gta cat agt gaa atc atc cag gtt gaa gcc Val Ser Glu Asp Lys Glu Val His Ser Glu Ile Ile Gln Val Glu Ala 835 840 845			2724
30	aca gat aaa gac ctg ggg ccc aac gga cac gtg acg tac tca att ctt Thr Asp Lys Asp Leu Gly Pro Asn Gly His Val Thr Tyr Ser Ile Leu 850 855 860			2772
35	aca gac aca gac aca ttt tca att gac agc gtg acg ggt gtt gtt aac Thr Asp Thr Asp Thr Phe Ser Ile Asp Ser Val Thr Gly Val Val Asn 865 870 875			2820
40	atc gca cgc cct ctg gat cga gag ctg cag cat gag cac tcc tta aag Ile Ala Arg Pro Leu Asp Arg Glu Leu Gln His Glu His Ser Leu Lys 880 885 890			2868
45	att gag gcc agg gac caa gcc aga gaa gag cct cag ctg ttc tcc act Ile Glu Ala Arg Asp Gln Ala Arg Glu Glu Pro Gln Leu Phe Ser Thr 895 900 905 910			2916
50	gtc gtt gtg aaa gta tca cta gaa gat gtt aat gac aac cca cct aca Val Val Val Lys Val Ser Leu Glu Asp Val Asn Asp Asn Pro Pro Thr 915 920 925			2964
55	ttt att cca cct aat tat cgt gtg aaa gtc cga gag gat ctt cca gaa Phe Ile Pro Pro Asn Tyr Arg Val Lys Val Arg Glu Asp Leu Pro Glu 930 935 940			3012
60	gga acc gtc atc atg tgg tta gaa gcc cac gat cct gat tta ggt cag Gly Thr Val Ile Met Trp Leu Glu Ala His Asp Pro Asp Leu Gly Gln 945 950 955			3060
65	tct ggt cag gtg aga tac agc ctt ctg gac cac gga gaa gga aac ttc Ser Gly Gln Val Arg Tyr Ser Leu Leu Asp His Gly Glu Gly Asn Phe 960 965 970			3108
70	gat gtg gat aaa ctc agt gga gca gtt agg atc gtc cag cag ttg gac Asp Val Asp Lys Leu Ser Gly Ala Val Arg Ile Val Gln Gln Leu Asp 975 980 985 990			3156
75	ttt gag aag aag caa gtg tat aat ctc act gtg agg gcc aaa gac aag Phe Glu Lys Lys Gln Val Tyr Asn Leu Thr Val Arg Ala Lys Asp Lys 995 1000 1005			3204
80	gga aag cca gtt tct ctg tct tct act tgc tat gtt gaa gtt gag Gly Lys Pro Val Ser Leu Ser Ser Thr Cys Tyr Val Glu Val Glu			3249

	1010	1015	1020	
5	gtg gtt gat Val Val Asp	gtg aat gag aac ctg Val Asn Glu Asn Leu	cac cca ccc gtg ttt tcc agc His Pro Pro Val Phe Ser Ser	3294
	1025	1030	1035	
10	ttt gtg gaa aag Phe Val Glu Lys	ggg aca gtg aaa gaa Gly Thr Val Lys Glu	gat gca cct gtt ggt tca Asp Ala Pro Val Gly Ser	3339
	1040	1045	1050	
	ttg gta atg acg Leu Val Met Thr	gtg tcg gct cat gat Val Ser Ala His Asp	gag gac gcc gga aga gat Glu Asp Ala Gly Arg Asp	3384
	1055	1060	1065	
15	ggg gag atc cga Gly Glu Ile Arg	tac tcc att aga gat Tyr Ser Ile Arg Asp	ggc tct ggc gtt ggt gtt Gly Ser Gly Val Gly Val	3429
	1070	1075	1080	
20	ttc aaa ata ggt Phe Lys Ile Gly	gaa gag aca ggt gtc Glu Glu Thr Gly Val	ata gag acg tca gat cga Ile Glu Thr Ser Asp Arg	3474
	1085	1090	1095	
25	ctg gac cgt gaa Leu Asp Arg Glu	tcg acc tcc cat tat Ser Thr Ser His Tyr	tgg cta aca gtc ttt gca Trp Leu Thr Val Phe Ala	3519
	1100	1105	1110	
30	acc gat cag ggt Thr Asp Gln Gly	gtc gtg cct ctt tca Val Val Pro Leu Ser	tcg ttc ata gag atc tac Ser Phe Ile Glu Ile Tyr	3564
	1115	1120	1125	
	ata gag gtt gag Ile Glu Val Glu	gat gtc aat gac aat Asp Val Asn Asp Asn	gca cca cag aca tca gag Ala Pro Gln Thr Ser Glu	3609
	1130	1135	1140	
35	cct gtt tat tac Pro Val Tyr Tyr	cca gaa atc atg gaa Pro Glu Ile Met Glu	aat tct cct aaa gat gta Asn Ser Pro Lys Asp Val	3654
	1145	1150	1155	
40	tct gtg gtc cag Ser Val Val Gln	atc gag gca ttt gat Ile Glu Ala Phe Asp	cca gat tog agc tct aat Pro Asp Ser Ser Ser Asn	3699
	1160	1165	1170	
45	gac aag ctc atg Asp Lys Leu Met	tac aaa att aca agt Tyr Lys Ile Thr Ser	gga aat cca caa gga ttc Gly Asn Pro Gln Gly Phe	3744
	1175	1180	1185	
50	ttt tca ata cat Phe Ser Ile His	cct aaa aca ggt ctc Pro Lys Thr Gly Leu	atc aca act acg tca agg Ile Thr Thr Thr Ser Arg	3789
	1190	1195	1200	
	aag cta gac cga Lys Leu Asp Arg	gaa cag caa gat gaa Glu Gln Gln Asp Glu	cac ata tta gag gtt act His Ile Leu Glu Val Thr	3834
	1205	1210	1215	
55	gtg aca gac aat Val Thr Asp Asn	ggg agt ccc ccc aaa Gly Ser Pro Pro Lys	tca acc att gca aga gtc Ser Thr Ile Ala Arg Val	3879
	1220	1225	1230	
60	att gtg aaa atc Ile Val Lys Ile	ctt gat gaa aat gac Leu Asp Glu Asn Asp	aac aaa cct cag ttt ctg Asn Lys Pro Gln Phe Leu	3924
	1235	1240	1245	
	caa aag ttc tac Gln Lys Phe Tyr	aaa atc aga ctc cct Lys Ile Arg Leu Pro	gag cgg gaa aag cca gac Glu Arg Glu Lys Pro Asp	3969

				1250					1255					1260			
5	cga Arg	gaa Glu	aga Arg	aat Asn 1265	gcc Ala	aga Arg	cgg Arg	gag Glu	ccg Pro 1270	ctc Leu	tat Tyr	cgc Arg	gtc Val	ata Ile 1275	gcc Ala		4014
10	acc Thr	gac Asp	aag Lys	gat Asp 1280	gag Glu	ggc Gly	ccc Pro	aat Asn	gca Ala 1285	gaa Glu	atc Ile	tcc Ser	tac Tyr	agc Ser 1290	atc Ile		4059
	gaa Glu	gac Asp	ggg Gly	aat Asn 1295	gag Glu	cat His	ggc Gly	aaa Lys	ttt Phe 1300	ttc Phe	atc Ile	gaa Glu	ccg Pro	aaa Lys 1305	act Thr		4104
15	gga Gly	gtg Val	gtt Val	tcg Ser 1310	tcc Ser	aag Lys	agg Arg	ttt Phe	tca Ser 1315	gca Ala	gct Ala	gga Gly	gaa Glu	tat Tyr 1320	gat Asp		4149
20	att Ile 1325	ctt Leu	tca Ser	att Ile	aag Lys	gca Ala	gtt Val	gac Asp	aat Asn	ggt Gly	cgc Arg	cct Pro	caa Gln	aag Lys	tca Ser		4194
25	tca Ser	acc Thr	acc Thr	aga Arg 1340	ctc Leu	cat His	att Ile	gaa Glu	tgg Trp 1345	atc Ile	tcc Ser	aag Lys	ccc Pro	aaa Lys 1350	cag Gln		4239
30	tcc Ser	ctg Leu	gag Glu	ccc Pro 1355	att Ile	tca Ser	ttt Phe	gaa Glu	gaa Glu 1360	tca Ser	ttt Phe	ttt Phe	acc Thr	ttt Phe 1365	act Thr		4284
	gtg Val	atg Met	gaa Glu	agt Ser 1370	gac Asp	ccc Pro	gtt Val	gct Ala	cac His 1375	atg Met	att Ile	gga Gly	gta Val	ata Ile 1380	tct Ser		4329
35	gtg Val	gag Glu	cct Pro	cct Pro 1385	ggc Gly	ata Ile	ccc Pro	ott Leu	tgg Trp 1390	ttt Phe	gac Asp	atc Ile	act Thr	ggt Gly 1395	ggc Gly		4374
40	aac Asn	tac Tyr	gac Asp	agt Ser 1400	cac His	ttc Phe	gat Asp	gtg Val	gac Asp 1405	aag Lys	gga Gly	act Thr	gga Gly	acc Thr 1410	atc Ile		4419
45	att Ile	gtt Val	gcc Ala	aaa Lys 1415	cct Pro	ctt Leu	gat Asp	gca Ala	gaa Glu 1420	cag Gln	aag Lys	tca Ser	aac Asn	tac Tyr 1425	aac Asn		4464
50	ctc Leu	aca Thr	gtc Val	gag Glu 1430	gct Ala	aca Thr	gat Asp	gga Gly	acc Thr 1435	acc Thr	act Thr	atc Ile	ctc Leu	act Thr 1440	cag Gln		4509
	gta Val 1445	ttc Phe	atc Ile	aaa Lys	gta Val	ata Ile	gac Asp	aca Thr	aat Asn	gac Asp	cat His	cgt Arg	cct Pro	cag Gln	ttt Phe		4554
55	tct Ser	aca Thr	tca Ser	aag Lys 1460	tat Tyr	gaa Glu	gtt Val	gtt Val	att Ile 1465	cct Pro	gaa Glu	gat Asp	aca Thr	gcg Ala 1470	cca Pro		4599
60	gaa Glu	aca Thr	gaa Glu	att Ile 1475	ttg Leu	caa Gln	atc Ile	agt Ser	gct Ala 1480	gtg Val	gat Asp	cag Gln	gat Asp	gag Glu 1485	aaa Lys		4644
	aac Asn	aaa Lys	cta Leu	atc Ile	tac Tyr	act Thr	ctg Leu	cag Gln	agc Ser	agt Ser	aga Arg	gat Asp	cca Pro	ctg Leu	agt Ser		4689

			1490					1495					1500			
5	ctc	aag	aaa	ttt	cgt	ctt	gat	cct	gca	acc	ggc	tct	ctc	tat	act	4734
	Leu	Lys	Lys	Phe	Arg	Leu	Asp	Pro	Ala	Thr	Gly	Ser	Leu	Tyr	Thr	
			1505						1510					1515		
10	tct	gag	aaa	ctg	gat	cat	gaa	gct	gtt	tca	cca	gca	cac	ctc	acg	4779
	Ser	Glu	Lys	Leu	Asp	His	Glu	Ala	Val	Ser	Pro	Ala	His	Leu	Thr	
			1520						1525					1530		
	gtc	atg	gta	cga	gat	caa	gat	gtg	cct	gta	aaa	cgc	aac	ttt	gca	4824
	Val	Met	Val	Arg	Asp	Gln	Asp	Val	Pro	Val	Lys	Arg	Asn	Phe	Ala	
			1535						1540					1545		
15	agg	att	gtg	gtc	aat	gtc	agc	gac	acg	aat	gac	cac	gcc	ccg	tgg	4869
	Arg	Ile	Val	Val	Asn	Val	Ser	Asp	Thr	Asn	Asp	His	Ala	Pro	Trp	
			1550						1555					1560		
20	ttc	acc	gct	tcc	tcc	tac	aaa	ggg	cgg	gtt	tat	gaa	tcg	gca	gcc	4914
	Phe	Thr	Ala	Ser	Ser	Tyr	Lys	Gly	Arg	Val	Tyr	Glu	Ser	Ala	Ala	
			1565				1570					1575				
25	gtt	ggc	tca	gtt	gtg	ttg	cag	gtg	acg	gct	ctg	gac	aag	gac	aaa	4959
	Val	Gly	Ser	Val	Val	Leu	Gln	Val	Thr	Ala	Leu	Asp	Lys	Asp	Lys	
			1580						1585					1590		
30	ggg	aaa	aat	gct	gaa	gtg	ctg	tac	tcg	atc	gag	tca	gga	aat	att	5004
	Gly	Lys	Asn	Ala	Glu	Val	Leu	Tyr	Ser	Ile	Glu	Ser	Gly	Asn	Ile	
			1595						1600					1605		
	gga	aat	att	gga	aat	tct	ttt	atg	att	gat	cct	gtc	ttg	ggc	tct	5049
	Gly	Asn	Ile	Gly	Asn	Ser	Phe	Met	Ile	Asp	Pro	Val	Leu	Gly	Ser	
			1610						1615					1620		
35	att	aaa	act	gcc	aaa	gaa	tta	gat	cga	agt	aac	caa	gcg	gag	tat	5094
	Ile	Lys	Thr	Ala	Lys	Glu	Leu	Asp	Arg	Ser	Asn	Gln	Ala	Glu	Tyr	
			1625						1630					1635		
40	gat	tta	atg	gta	aaa	gct	aca	gat	aag	ggc	agt	cca	cca	atg	agt	5139
	Asp	Leu	Met	Val	Lys	Ala	Thr	Asp	Lys	Gly	Ser	Pro	Pro	Met	Ser	
			1640						1645					1650		
45	gaa	ata	act	tct	gtg	cgt	atc	ttt	gtc	aca	att	gct	gac	aac	gcc	5184
	Glu	Ile	Thr	Ser	Val	Arg	Ile	Phe	Val	Thr	Ile	Ala	Asp	Asn	Ala	
			1655						1660					1665		
50	tct	ccg	aag	ttt	aca	tca	aaa	gaa	tat	tct	gtt	gaa	ctt	agt	gaa	5229
	Ser	Pro	Lys	Phe	Thr	Ser	Lys	Glu	Tyr	Ser	Val	Glu	Leu	Ser	Glu	
			1670						1675					1680		
	act	gtc	agc	att	ggg	agt	ttc	gtt	ggg	atg	gtt	aca	gcc	cat	agt	5274
	Thr	Val	Ser	Ile	Gly	Ser	Phe	Val	Gly	Met	Val	Thr	Ala	His	Ser	
			1685				1690					1695				
55	caa	tca	tca	gtg	gtg	tat	gaa	ata	aaa	gat	gga	aat	aca	ggg	gat	5319
	Gln	Ser	Ser	Val	Val	Tyr	Glu	Ile	Lys	Asp	Gly	Asn	Thr	Gly	Asp	
			1700						1705					1710		
60	gct	ttt	gat	att	aat	cca	cat	tct	gga	act	atc	atc	act	cag	aaa	5364
	Ala	Phe	Asp	Ile	Asn	Pro	His	Ser	Gly	Thr	Ile	Ile	Thr	Gln	Lys	
			1715						1720					1725		
	gcc	ctg	gac	ttt	gaa	act	ttg	ccc	att	tac	aca	ttg	ata	ata	caa	5409
	Ala	Leu	Asp	Phe	Glu	Thr	Leu	Pro	Ile	Tyr	Thr	Leu	Ile	Ile	Gln	

	1730								1735								1740								
5	gga	act	aac	atg	gct	ggt	ttg	tcc	act	aat	aca	acg	gtt	cta	gtt		5454								
	Gly	Thr	Asn	Met	Ala	Gly	Leu	Ser	Thr	Asn	Thr	Thr	Val	Leu	Val										
	1745								1750				1755												
10	cac	ttg	cag	gat	gag	aat	gac	aac	gcg	cca	gtt	ttt	atg	cag	gca		5499								
	His	Leu	Gln	Asp	Glu	Asn	Asp	Asn	Ala	Pro	Val	Phe	Met	Gln	Ala										
	1760								1765				1770												
15	gaa	tat	aca	gga	ctc	att	agt	gaa	tca	gcc	tca	att	aac	agc	gtg		5544								
	Glu	Tyr	Thr	Gly	Leu	Ile	Ser	Glu	Ser	Ala	Ser	Ile	Asn	Ser	Val										
	1775								1780				1785												
20	gtc	cta	aca	gac	agg	aat	gtc	cca	ctg	gtg	att	cga	gca	gct	gat		5589								
	Val	Leu	Thr	Asp	Arg	Asn	Val	Pro	Leu	Val	Ile	Arg	Ala	Ala	Asp										
	1790								1795				1800												
25	gct	gat	aaa	gac	tca	aat	gct	ttg	ctt	gta	tat	cac	att	gtt	gaa		5634								
	Ala	Asp	Lys	Asp	Ser	Asn	Ala	Leu	Leu	Val	Tyr	His	Ile	Val	Glu										
	1805				1810								1815												
30	cca	tct	gta	cac	aca	tat	ttt	gct	att	gat	tct	agc	act	ggg	gct		5679								
	Pro	Ser	Val	His	Thr	Tyr	Phe	Ala	Ile	Asp	Ser	Ser	Thr	Gly	Ala										
	1820								1825				1830												
35	att	cat	aca	gta	cta	agt	ctg	gac	tat	gaa	gaa	aca	agt	att	ttt		5724								
	Ile	His	Thr	Val	Leu	Ser	Leu	Asp	Tyr	Glu	Glu	Thr	Ser	Ile	Phe										
	1835								1840				1845												
40	cac	ttt	acc	gtc	caa	gtg	cat	gac	atg	gga	acc	cca	cgt	tta	ttt		5769								
	His	Phe	Thr	Val	Gln	Val	His	Asp	Met	Gly	Thr	Pro	Arg	Leu	Phe										
	1850								1855				1860												
45	gct	gag	tat	gca	gcg	aat	gta	aca	gta	cat	gta	att	gac	att	aat		5814								
	Ala	Glu	Tyr	Ala	Ala	Asn	Val	Thr	Val	His	Val	Ile	Asp	Ile	Asn										
	1865								1870				1875												
50	gac	tgc	ccc	cct	gtg	ttt	gcc	aag	cca	tta	tat	gaa	gca	tct	ctt		5859								
	Asp	Cys	Pro	Pro	Val	Phe	Ala	Lys	Pro	Leu	Tyr	Glu	Ala	Ser	Leu										
	1880								1885				1890												
55	ttg	tta	cca	aca	tac	aaa	gga	gta	aaa	gtc	atc	aca	gta	aat	gct		5904								
	Leu	Leu	Pro	Thr	Tyr	Lys	Gly	Val	Lys	Val	Ile	Thr	Val	Asn	Ala										
	1895								1900				1905												
60	aca	gat	gct	gat	tca	agt	gca	ttc	tca	cag	ttg	att	tac	tcc	atc		5949								
	Thr	Asp	Ala	Asp	Ser	Ser	Ala	Phe	Ser	Gln	Leu	Ile	Tyr	Ser	Ile										
	1910								1915				1920												
65	acc	gaa	ggc	aac	atc	ggg	gag	aag	ttt	tct	atg	gac	tac	aag	act		5994								
	Thr	Glu	Gly	Asn	Ile	Gly	Glu	Lys	Phe	Ser	Met	Asp	Tyr	Lys	Thr										
	1925				1930								1935												
70	ggg	gct	ctc	act	gtc	caa	aac	aca	act	cag	tta	aga	agc	cgc	tac		6039								
	Gly	Ala	Leu	Thr	Val	Gln	Asn	Thr	Thr	Gln	Leu	Arg	Ser	Arg	Tyr										
	1940								1945				1950												
75	gag	cta	acc	gtt	aga	gct	tcc	gat	ggc	aga	ttt	gcc	ggc	ctt	acc		6084								
	Glu	Leu	Thr	Val	Arg	Ala	Ser	Asp	Gly	Arg	Phe	Ala	Gly	Leu	Thr										
	1955								1960				1965												
80	tct	gtc	aaa	att	aat	gtg	aaa	gaa	agc	aaa	gaa	agt	cac	cta	aag		6129								
	Ser	Val	Lys	Ile	Asn	Val	Lys	Glu	Ser	Lys	Glu	Ser	His	Leu	Lys										

	1970	1975	1980	
5	ttt acc cag gat Phe Thr Gln Asp 1985	gtc tac tct gcg gta Val Tyr Ser Ala Val 1990	gtg aaa gag aat tcc acc Val Lys Glu Asn Ser Thr 1995	6174
10	gag gcc gaa aca Glu Ala Glu Thr 2000	tta gct gtc att act Leu Ala Val Ile Thr 2005	gct att ggg agt cca atc Ala Ile Gly Ser Pro Ile 2010	6219
15	aat gag cct ttg Asn Glu Pro Leu 2015	ttt tat cac atc ctc Phe Tyr His Ile Leu 2020	aac cca gat cgc aga ttt Asn Pro Asp Arg Arg Phe 2025	6264
20	aaa ata agc cgc Lys Ile Ser Arg 2030	act tca ggg gtt ctg Thr Ser Gly Val Leu 2035	tca acc act ggc acg ccc Ser Thr Thr Gly Thr Pro 2040	6309
25	ttc gat cgt gag Phe Asp Arg Glu 2045	cag cag gag gcg ttt Gln Gln Glu Ala Phe 2050	gat gtg gtt gta gaa gtg Asp Val Val Val Glu Val 2055	6354
30	ata gag gaa cat Ile Glu Glu His 2060	aag cct tct gca gtg Lys Pro Ser Ala Val 2065	gcc cac gtt gtc gtg aag Ala His Val Val Val Lys 2070	6399
35	gtc att gta gaa Val Ile Val Glu 2075	gac caa aat gat aat Asp Gln Asn Asp Asn 2080	gcg ccg gtg ttt gtc aac Ala Pro Val Phe Val Asn 2085	6444
40	ctt ccc tac tac Leu Pro Tyr Tyr 2090	gcc gtt gtt aaa gtg Ala Val Val Lys Val 2095	gac act gag gtg ggc cat Asp Thr Glu Val Gly His 2100	6489
45	gtc att cgc tat Val Ile Arg Tyr 2105	gtc act gct gta gac Val Thr Ala Val Asp 2110	aga gac agt ggc aga aac Arg Asp Ser Gly Arg Asn 2115	6534
50	ggg gaa gtg cat Gly Glu Val His 2120	tac tac ctc aag gaa Tyr Tyr Leu Lys Glu 2125	cat cat gaa cac ttt caa His His Glu His Phe Gln 2130	6579
55	att gga ccc ttg Ile Gly Pro Leu 2135	ggt gaa att tca ctg Gly Glu Ile Ser Leu 2140	aaa aag caa ttt gag ctt Lys Lys Gln Phe Glu Leu 2145	6624
60	gac acc tta aat Asp Thr Leu Asn 2150	aaa gaa tat ctt gtt Lys Glu Tyr Leu Val 2155	aca gtg gtt gca aaa gat Thr Val Val Ala Lys Asp 2160	6669
	gga ggg aac ccg Gly Gly Asn Pro 2165	gcc ttt tca gcg gaa Ala Phe Ser Ala Glu 2170	gtt atc gtt ccg atc act Val Ile Val Pro Ile Thr 2175	6714
	gtc atg aat aaa Val Met Asn Lys 2180	gcc atg cct gtg ttt Ala Met Pro Val Phe 2185	gaa aaa cct ttc tac agt Glu Lys Pro Phe Tyr Ser 2190	6759
	gca gag att gca Ala Glu Ile Ala 2195	gag agc atc cag gtg Glu Ser Ile Gln Val 2200	cac agc cct gtg gtc cac His Ser Pro Val Val His 2205	6804
	gtg cag gct aac Val Gln Ala Asn	agc ccg gaa ggc ctg Ser Pro Glu Gly Leu	aaa gtg ttc tac agc atc Lys Val Phe Tyr Ser Ile	6849

	2210	2215	2220	
5	aca gac gga gac Thr Asp Gly Asp 2225	cct ttc agc cag ttc Pro Phe Ser Gln Phe 2230	act att aac ttc aat act Thr Ile Asn Phe Asn Thr 2235	6894
10	gga gtt atc aat Gly Val Ile Asn 2240	gtc ata gct cct ctg Val Ile Ala Pro Leu 2245	gac ttt gag gcc cac ccg Asp Phe Glu Ala His Pro 2250	6939
	gca tat aag ctg Ala Tyr Lys Leu 2255	agc ata cgc gca act Ser Ile Arg Ala Thr 2260	gac tcc ttg acg ggc gct Asp Ser Leu Thr Gly Ala 2265	6984
15	cat gct gaa gta His Ala Glu Val 2270	ttt gtg gac atc ata Phe Val Asp Ile Ile 2275	gta gac gac atc aat gat Val Asp Asp Ile Asn Asp 2280	7029
20	aac cct cct gtg Asn Pro Pro Val 2285	ttt gct cag cag tct Phe Ala Gln Gln Ser 2290	tat gcg gtg acc ctg tct Tyr Ala Val Thr Leu Ser 2295	7074
25	gag gca tct gta Glu Ala Ser Val 2300	att gga acg tct gtt Ile Gly Thr Ser Val 2305	ggt caa gtt aga gcc acc Val Gln Val Arg Ala Thr 2310	7119
30	gat tct gat tca Asp Ser Asp Ser 2315	gaa cca aat aga gga Glu Pro Asn Arg Gly 2320	atc tca tac cag atg ttt Ile Ser Tyr Gln Met Phe 2325	7164
	ggg aat cac agc Gly Asn His Ser 2330	aag agt cat gat cat Lys Ser His Asp His 2335	ttt cat gta gac agc agc Phe His Val Asp Ser Ser 2340	7209
35	act ggc ctc atc Thr Gly Leu Ile 2345	tca cta ctc aga acc Ser Leu Leu Arg Thr 2350	ctg gat tac gag cag tcc Leu Asp Tyr Glu Gln Ser 2355	7254
40	cgg cag cac acg Arg Gln His Thr 2360	att ttt gtg agg gca Ile Phe Val Arg Ala 2365	ggt gat ggt ggt atg ccc Val Asp Gly Gly Met Pro 2370	7299
45	acg ctg agc agt Thr Leu Ser Ser 2375	gat gtg att gtc acg Asp Val Ile Val Thr 2380	gtg gac gtt acc gac ctc Val Asp Val Thr Asp Leu 2385	7344
50	aat ggt aat cca Asn Gly Asn Pro 2390	cca ctc ttt gaa caa Pro Leu Phe Glu Gln 2395	cag att tat gaa gcc aga Gln Ile Tyr Glu Ala Arg 2400	7389
	att agc gag cac Ile Ser Glu His 2405	gcc cct cat ggg cat Ala Pro His Gly His 2410	ttc gtg acc tgt gta aaa Phe Val Thr Cys Val Lys 2415	7434
55	gcc tat gat gca Ala Tyr Asp Ala 2420	gac agt tca gac ata Asp Ser Ser Asp Ile 2425	gac aag ttg cag tat tcc Asp Lys Leu Gln Tyr Ser 2430	7479
60	att ctg tct ggc Ile Leu Ser Gly 2435	aat gat cat aaa cat Asn Asp His Lys His 2440	ttt gtc att gac agt gca Phe Val Ile Asp Ser Ala 2445	7524
	aca ggg att atc Thr Gly Ile Ile	acc ctc tca aac ctg Thr Leu Ser Asn Leu	cac cgg cac gcc ctg aag His Arg His Ala Leu Lys	7569





				2690					2695					2700			
5	ctt	cca	aaa	ttt	tca	gaa	cct	ttc	tat	acc	ttt	aca	gtg	tca	gag		8334
	Leu	Pro	Lys	Phe	Ser	Glu	Pro	Phe	Tyr	Thr	Phe	Thr	Val	Ser	Glu		
				2705						2710					2715		
10	gac	gtg	cct	gtt	gga	aca	gag	ata	gat	ctc	atc	cga	gca	gaa	cat		8379
	Asp	Val	Pro	Val	Gly	Thr	Glu	Ile	Asp	Leu	Ile	Arg	Ala	Glu	His		
				2720						2725					2730		
15	agt	ggg	act	gtt	ctt	tac	agc	ctg	gtc	aaa	ggg	aat	act	cca	gaa		8424
	Ser	Gly	Thr	Val	Leu	Tyr	Ser	Leu	Val	Lys	Gly	Asn	Thr	Pro	Glu		
				2735						2740					2745		
20	agc	aat	agg	gat	gag	tcc	ttt	gtg	att	gac	aga	cag	agc	ggg	aga		8469
	Ser	Asn	Arg	Asp	Glu	Ser	Phe	Val	Ile	Asp	Arg	Gln	Ser	Gly	Arg		
				2750						2755					2760		
25	ctg	aag	ttg	gag	aag	agt	ctt	gat	cat	gag	aca	act	aag	tgg	tat		8514
	Leu	Lys	Leu	Glu	Lys	Ser	Leu	Asp	His	Glu	Thr	Thr	Lys	Trp	Tyr		
				2765			2770								2775		
30	cag	ttt	tcc	ata	ctg	gcc	agg	tgc	act	caa	gat	gac	cat	gag	atg		8559
	Gln	Phe	Ser	Ile	Leu	Ala	Arg	Cys	Thr	Gln	Asp	Asp	His	Glu	Met		
				2780						2785					2790		
35	gtg	gct	tct	gta	gat	gtt	agt	atc	caa	gtg	aaa	gat	gca	aat	gac		8604
	Val	Ala	Ser	Val	Asp	Val	Ser	Ile	Gln	Val	Lys	Asp	Ala	Asn	Asp		
				2795						2800					2805		
40	aac	agc	ccg	gtc	ttt	gaa	tct	agt	cca	tat	gag	gca	ttc	att	gtt		8649
	Asn	Ser	Pro	Val	Phe	Glu	Ser	Ser	Pro	Tyr	Glu	Ala	Phe	Ile	Val		
				2810						2815					2820		
45	gaa	aac	ctg	cca	ggg	gga	agt	aga	gta	att	cag	atc	agg	gca	tct		8694
	Glu	Asn	Leu	Pro	Gly	Gly	Ser	Arg	Val	Ile	Gln	Ile	Arg	Ala	Ser		
				2825						2830					2835		
50	gat	gct	gac	tca	gga	acc	aac	ggc	caa	gtt	atg	tat	agc	ctg	gat		8739
	Asp	Ala	Asp	Ser	Gly	Thr	Asn	Gly	Gln	Val	Met	Tyr	Ser	Leu	Asp		
				2840						2845					2850		
55	cag	tca	caa	agt	gtg	gaa	gtc	att	gaa	tcc	ttt	gcc	att	aac	atg		8784
	Gln	Ser	Gln	Ser	Val	Glu	Val	Ile	Glu	Ser	Phe	Ala	Ile	Asn	Met		
				2855						2860					2865		
60	gaa	aca	ggc	tgg	att	aca	act	tta	aag	gaa	ctt	gac	cat	gaa	aag		8829
	Glu	Thr	Gly	Trp	Ile	Thr	Thr	Leu	Lys	Glu	Leu	Asp	His	Glu	Lys		
				2870						2875					2880		
65	aga	gac	aat	tac	cag	att	aaa	gtg	gtt	gca	tca	gat	cat	ggg	gaa		8874
	Arg	Asp	Asn	Tyr	Gln	Ile	Lys	Val	Val	Ala	Ser	Asp	His	Gly	Glu		
				2885			2890					2895					
70	aag	atc	cag	cta	tcc	tcc	aca	gcc	att	gtg	gat	gtt	acc	gtc	acc		8919
	Lys	Ile	Gln	Leu	Ser	Ser	Thr	Ala	Ile	Val	Asp	Val	Thr	Val	Thr		
				2900						2905					2910		
75	gat	gtc	aac	gat	agt	cca	cca	cga	ttc	acg	gcc	gag	atc	tat	aaa		8964
	Asp	Val	Asn	Asp	Ser	Pro	Pro	Arg	Phe	Thr	Ala	Glu	Ile	Tyr	Lys		
				2915						2920					2925		
80	ggg	act	gtg	agt	gag	gat	gac	ccc	caa	ggg	ggg	gtg	att	gcc	atc		9009
	Gly	Thr	Val	Ser	Glu	Asp	Asp	Pro	Gln	Gly	Gly	Val	Ile	Ala	Ile		

	2930	2935	2940	
5	tta agt acc acg gat gct gat tct gaa gag atc aac aga caa gtt Leu Ser Thr Thr Asp Ala Asp Ser Glu Glu Ile Asn Arg Gln Val	2945 2950	2955	9054
10	aca tat ttc ata aca gga ggg gat cct tta gga cag ttt gcc gtt Thr Tyr Phe Ile Thr Gly Gly Asp Pro Leu Gly Gln Phe Ala Val	2960 2965	2970	9099
15	gaa act ata cag aat gaa tgg aag gta tat gtg aag aaa cct cta Glu Thr Ile Gln Asn Glu Trp Lys Val Tyr Val Lys Lys Pro Leu	2975 2980	2985	9144
20	gac agg gaa aaa agg gac aat tac ctt ctt act atc acg gca act Asp Arg Glu Lys Arg Asp Asn Tyr Leu Leu Thr Ile Thr Ala Thr	2990 2995	3000	9189
25	gat ggc acc ttc tca tca aaa gcg ata gtt gaa gtg aaa gtt ctg Asp Gly Thr Phe Ser Ser Lys Ala Ile Val Glu Val Lys Val Leu	3005 3010	3015	9234
30	gat gca aat gac aac agt cca gtt tgt gaa aag act tta tat tca Asp Ala Asn Asp Asn Ser Pro Val Cys Glu Lys Thr Leu Tyr Ser	3020 3025	3030	9279
35	gac act att cct gaa gac gtc ctt cct gga aaa ttg atc atg cag Asp Thr Ile Pro Glu Asp Val Leu Pro Gly Lys Leu Ile Met Gln	3035 3040	3045	9324
40	atc tct gct aca gac gca gac atc cgc tct aac gct gaa att act Ile Ser Ala Thr Asp Ala Asp Ile Arg Ser Asn Ala Glu Ile Thr	3050 3055	3060	9369
45	tac acg tta ttg ggt tca ggt gca gaa aaa ttc aaa cta aat cca Tyr Thr Leu Leu Gly Ser Gly Ala Glu Lys Phe Lys Leu Asn Pro	3065 3070	3075	9414
50	gac aca ggt gaa ctg aaa acg tca acc ccc ctt gat cgt gag gag Asp Thr Gly Glu Leu Lys Thr Ser Thr Pro Leu Asp Arg Glu Glu	3080 3085	3090	9459
55	caa gct gtt tat cat ctt ctc gtc agg gcc aca gat gga gga gga Gln Ala Val Tyr His Leu Leu Val Arg Ala Thr Asp Gly Gly Gly	3095 3100	3105	9504
60	aga ttc tgc caa gcc agt att gtc gtc acg cta gaa gat gtg aac Arg Phe Cys Gln Ala Ser Ile Val Val Thr Leu Glu Asp Val Asn	3110 3115	3120	9549
65	gat aac gcc ccc gaa ttc tct gcc gat cct tat gcc atc acc gtg Asp Asn Ala Pro Glu Phe Ser Ala Asp Pro Tyr Ala Ile Thr Val	3125 3130	3135	9594
70	ttt gaa aac aca gag ccg gga acg ctg ctg aca aga gtg cag gcc Phe Glu Asn Thr Glu Pro Gly Thr Leu Leu Thr Arg Val Gln Ala	3140 3145	3150	9639
75	aca gat gcc gac gca gga tta aat cgg aag att tta tac tca ctg Thr Asp Ala Asp Ala Gly Leu Asn Arg Lys Ile Leu Tyr Ser Leu	3155 3160	3165	9684
80	att gac tct gct gat ggg cag ttc tcc att aac gaa tta tct gga Ile Asp Ser Ala Asp Gly Gln Phe Ser Ile Asn Glu Leu Ser Gly			9729

					3170					3175					3180		
5	att	att	cag	tta	gaa	aaa	cct	ttg	gac	aga	gaa	ctc	cag	gca	gta	9774	
	Ile	Ile	Gln	Leu	Glu	Lys	Pro	Leu	Asp	Arg	Glu	Leu	Gln	Ala	Val		
				3185					3190					3195			
10	tac	acc	ctc	tct	ttg	aaa	gct	gtg	gat	caa	ggc	ttg	cca	agg	agg	9819	
	Tyr	Thr	Leu	Ser	Leu	Lys	Ala	Val	Asp	Gln	Gly	Leu	Pro	Arg	Arg		
				3200					3205					3210			
15	ctg	act	gcc	act	ggc	act	gtg	att	gta	tca	gtt	ctt	gac	ata	aat	9864	
	Leu	Thr	Ala	Thr	Gly	Thr	Val	Ile	Val	Ser	Val	Leu	Asp	Ile	Asn		
				3215					3220					3225			
20	gac	aac	ccc	cct	gtg	ttt	gag	tac	cgt	gaa	tat	ggg	gcc	acc	gtg	9909	
	Asp	Asn	Pro	Pro	Val	Phe	Glu	Tyr	Arg	Glu	Tyr	Gly	Ala	Thr	Val		
				3230					3235					3240			
25	tct	gag	gac	att	ctt	gtt	gga	act	gaa	gtt	ctt	caa	gtg	tat	gca	9954	
	Ser	Glu	Asp	Ile	Leu	Val	Gly	Thr	Glu	Val	Leu	Gln	Val	Tyr	Ala		
				3245					3250				3255				
30	gca	agt	cgg	gat	att	gaa	gca	aat	gca	gaa	atc	acc	tac	tca	ata	9999	
	Ala	Ser	Arg	Asp	Ile	Glu	Ala	Asn	Ala	Glu	Ile	Thr	Tyr	Ser	Ile		
				3260					3265					3270			
35	ata	agt	gga	aat	gaa	cat	ggg	aaa	ttc	agc	ata	gat	tct	aaa	aca	10044	
	Ile	Ser	Gly	Asn	Glu	His	Gly	Lys	Phe	Ser	Ile	Asp	Ser	Lys	Thr		
				3275					3280					3285			
40	ggg	gcc	gta	ttt	atc	att	gag	aat	ctg	gat	tat	gag	agc	tct	cat	10089	
	Gly	Ala	Val	Phe	Ile	Ile	Glu	Asn	Leu	Asp	Tyr	Glu	Ser	Ser	His		
				3290					3295					3300			
45	gag	tat	tac	cta	aca	gta	gag	gcc	act	gat	gga	ggc	acg	cct	tca	10134	
	Glu	Tyr	Tyr	Leu	Thr	Val	Glu	Ala	Thr	Asp	Gly	Gly	Thr	Pro	Ser		
				3305					3310					3315			
50	ctg	agc	gac	gtt	gcc	act	gtg	aac	gtt	aat	gta	aca	gat	atc	aac	10179	
	Leu	Ser	Asp	Val	Ala	Thr	Val	Asn	Val	Asn	Val	Thr	Asp	Ile	Asn		
				3320					3325					3330			
55	gat	aat	acc	cct	gtg	ttc	agc	caa	gac	acc	tac	acg	aca	gtc	atc	10224	
	Asp	Asn	Thr	Pro	Val	Phe	Ser	Gln	Asp	Thr	Tyr	Thr	Thr	Val	Ile		
				3335					3340					3345			
60	agt	gaa	gat	gcc	gtt	ctt	gag	cag	tct	gtc	atc	acg	gtt	atg	gcc	10269	
	Ser	Glu	Asp	Ala	Val	Leu	Glu	Gln	Ser	Val	Ile	Thr	Val	Met	Ala		
				3350					3355					3360			
65	gat	gat	gcc	gat	gga	cct	tcc	aac	agc	cac	atc	cac	tac	tca	att	10314	
	Asp	Asp	Ala	Asp	Gly	Pro	Ser	Asn	Ser	His	Ile	His	Tyr	Ser	Ile		
				3365					3370				3375				
70	ata	gat	ggc	aac	caa	gga	agc	tcg	ttc	aca	att	gac	ccc	gtc	agg	10359	
	Ile	Asp	Gly	Asn	Gln	Gly	Ser	Ser	Phe	Thr	Ile	Asp	Pro	Val	Arg		
				3380					3385					3390			
75	gga	gaa	gtc	aaa	gtg	acc	aaa	ctt	ctc	gac	cga	gaa	acg	att	tca	10404	
	Gly	Glu	Val	Lys	Val	Thr	Lys	Leu	Leu	Asp	Arg	Glu	Thr	Ile	Ser		
				3395					3400					3405			
80	ggg	tac	acg	ctc	acg	gtt	caa	gct	tct	gat	aat	ggc	agt	cca	ccc	10449	
	Gly	Tyr	Thr	Leu	Thr	Val	Gln	Ala	Ser	Asp	Asn	Gly	Ser	Pro	Pro		

					3410					3415					3420		
5	aga	gtc	aac	acg	acg	acc	gtg	aac	atc	gat	gtg	tcc	gat	gtc	aat	10494	
	Arg	Val	Asn	Thr	Thr	Thr	Val	Asn	Ile	Asp	Val	Ser	Asp	Val	Asn		
				3425					3430					3435			
10	gac	aac	gcg	ccc	gtc	ttc	tcc	agg	gga	aac	tac	agt	gtc	att	atc	10539	
	Asp	Asn	Ala	Pro	Val	Phe	Ser	Arg	Gly	Asn	Tyr	Ser	Val	Ile	Ile		
				3440					3445					3450			
15	cag	gaa	aat	aag	cca	gtg	ggc	ttc	agc	gtg	ctg	cag	ctg	gta	gta	10584	
	Gln	Glu	Asn	Lys	Pro	Val	Gly	Phe	Ser	Val	Leu	Gln	Leu	Val	Val		
				3455					3460					3465			
20	aca	gat	gag	gat	tct	tcc	cat	aac	ggg	cca	ccc	ttc	ttc	ttt	act	10629	
	Thr	Asp	Glu	Asp	Ser	Ser	His	Asn	Gly	Pro	Pro	Phe	Phe	Phe	Thr		
				3470					3475					3480			
25	att	gta	act	gga	aat	gat	gag	aag	gct	ttt	gaa	gtt	aac	ccg	caa	10674	
	Ile	Val	Thr	Gly	Asn	Asp	Glu	Lys	Ala	Phe	Glu	Val	Asn	Pro	Gln		
				3485					3490				3495				
30	gga	gtc	ctc	ctg	aca	tca	tct	gcc	atc	aag	agg	aag	gag	aaa	gat	10719	
	Gly	Val	Leu	Leu	Thr	Ser	Ser	Ala	Ile	Lys	Arg	Lys	Glu	Lys	Asp		
				3500					3505					3510			
35	cat	tac	tta	ctg	cag	gtg	aag	gtg	gca	gat	aat	gga	aag	cct	cag	10764	
	His	Tyr	Leu	Leu	Gln	Val	Lys	Val	Ala	Asp	Asn	Gly	Lys	Pro	Gln		
				3515					3520					3525			
40	ttg	tca	tct	ttg	aca	tac	att	gac	att	agg	gta	att	gag	gag	agc	10809	
	Leu	Ser	Ser	Leu	Thr	Tyr	Ile	Asp	Ile	Arg	Val	Ile	Glu	Glu	Ser		
				3530					3535					3540			
45	atc	tat	ccg	cct	gcg	att	ttg	ccc	ctg	gag	att	ttc	atc	acc	tct	10854	
	Ile	Tyr	Pro	Pro	Ala	Ile	Leu	Pro	Leu	Glu	Ile	Phe	Ile	Thr	Ser		
				3545					3550					3555			
50	tct	gga	gaa	gaa	tac	tca	ggg	ggc	gtc	att	ggg	aag	atc	cat	gcc	10899	
	Ser	Gly	Glu	Glu	Tyr	Ser	Gly	Gly	Val	Ile	Gly	Lys	Ile	His	Ala		
				3560					3565					3570			
55	aca	gac	cag	gac	gtg	tat	gat	act	cta	acc	tac	agt	ctc	gac	cct	10944	
	Thr	Asp	Gln	Asp	Val	Tyr	Asp	Thr	Leu	Thr	Tyr	Ser	Leu	Asp	Pro		
				3575					3580					3585			
60	cag	atg	gac	aac	ctg	ttc	tct	gtt	tcc	agc	aca	ggg	ggc	aag	ctg	10989	
	Gln	Met	Asp	Asn	Leu	Phe	Ser	Val	Ser	Ser	Thr	Gly	Gly	Lys	Leu		
				3590					3595					3600			
65	ata	gca	cac	aaa	aag	cta	gac	ata	ggg	caa	tac	ctt	ctc	aat	gtc	11034	
	Ile	Ala	His	Lys	Lys	Leu	Asp	Ile	Gly	Gln	Tyr	Leu	Leu	Asn	Val		
				3605					3610				3615				
70	agc	gta	aca	gat	ggg	aag	ttc	acg	acg	gtg	gcc	gac	atc	aca	gtg	11079	
	Ser	Val	Thr	Asp	Gly	Lys	Phe	Thr	Thr	Val	Ala	Asp	Ile	Thr	Val		
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[illegible]



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80	Glu 1370	Ser	Asp	Pro	Val	Ala	His 1375	Met	Ile	Gly	Val	Ile 1380	Ser	Val	Glu

5	Pro 1385	Pro 1400	Gly 1415	Ile 1430	Pro 1445	Leu 1460	Trp 1480	Phe 1505	Asp 1520	Ile 1535	Thr 1550	Gly 1565	Gly 1580	Asn 1600	Tyr 1615
10	Asp 1400	Ser 1415	His 1430	Phe 1445	Asp 1460	Val 1480	Asp 1495	Lys 1510	Gly 1525	Thr 1540	Gly 1555	Thr 1570	Ile 1585	Ile 1600	Val 1615
15	Ala 1415	Lys 1430	Pro 1445	Leu 1460	Asp 1480	Ala 1495	Glu 1510	Gln 1525	Lys 1540	Ser 1555	Asn 1570	Tyr 1585	Asn 1600	Leu 1615	Thr 1630
20	Val 1430	Glu 1445	Ala 1460	Thr 1480	Asp 1495	Gly 1510	Thr 1525	Thr 1540	Ile 1555	Leu 1570	Thr 1585	Gln 1600	Val 1615	Phe 1630	Thr 1645
25	Ile 1445	Lys 1460	Val 1480	Ile 1495	Asp 1510	Thr 1525	Asn 1540	Asp 1555	His 1570	Arg 1585	Pro 1600	Gln 1615	Phe 1630	Ser 1645	Thr 1660
30	Ser 1460	Lys 1480	Tyr 1495	Glu 1510	Val 1525	Val 1540	Ile 1555	Pro 1570	Glu 1585	Asp 1600	Thr 1615	Ala 1630	Pro 1645	Glu 1660	Thr 1675
35	Glu 1475	Ile 1490	Leu 1505	Gln 1520	Ile 1535	Ser 1550	Ala 1565	Val 1580	Asp 1595	Gln 1610	Asp 1625	Glu 1640	Lys 1655	Asn 1670	Lys 1685
40	Leu 1490	Ile 1505	Tyr 1520	Thr 1535	Leu 1550	Gln 1565	Ser 1580	Ser 1595	Arg 1610	Asp 1625	Pro 1640	Leu 1655	Ser 1670	Leu 1685	Lys 1700
45	Lys 1505	Phe 1520	Arg 1535	Leu 1550	Asp 1565	Pro 1580	Ala 1595	Thr 1610	Gly 1625	Ser 1640	Leu 1655	Tyr 1670	Thr 1685	Ser 1700	Glu 1715
50	Lys 1520	Leu 1535	Asp 1550	His 1565	Glu 1580	Ala 1595	Val 1610	Ser 1625	Pro 1640	Ala 1655	His 1670	Leu 1685	Thr 1700	Val 1715	Met 1730
55	Val 1535	Arg 1550	Asp 1565	Gln 1580	Asp 1595	Val 1610	Pro 1625	Val 1640	Lys 1655	Arg 1670	Asn 1685	Phe 1700	Ala 1715	Arg 1730	Ile 1745
60	Val 1550	Val 1565	Asn 1580	Val 1595	Ser 1610	Asp 1625	Thr 1640	Asn 1655	Asp 1670	His 1685	Ala 1700	Pro 1715	Trp 1730	Phe 1745	Thr 1760
65	Ala 1565	Ser 1580	Ser 1595	Tyr 1610	Lys 1625	Gly 1640	Arg 1655	Val 1670	Tyr 1685	Glu 1700	Ser 1715	Ala 1730	Ala 1745	Val 1760	Gly 1775
70	Ser 1580	Val 1595	Val 1610	Leu 1625	Gln 1640	Val 1655	Thr 1670	Ala 1685	Leu 1700	Asp 1715	Lys 1730	Asp 1745	Lys 1760	Gly 1775	Lys 1790
75	Asn 1595	Ala 1610	Glu 1625	Val 1640	Leu 1655	Tyr 1670	Ser 1685	Ile 1700	Glu 1715	Ser 1730	Gly 1745	Asn 1760	Ile 1775	Gly 1790	Asn 1805
80	Ile 1610	Gly 1625	Asn 1640	Ser 1655	Phe 1670	Met 1685	Ile 1700	Asp 1715	Pro 1730	Val 1745	Leu 1760	Gly 1775	Ser 1790	Ile 1805	Lys 1820

5	Thr 1625	Ala	Lys	Glu	Leu	Asp	Arg 1630	Ser	Asn	Gln	Ala	Glu 1635	Tyr	Asp	Leu
10	Met 1640	Val	Lys	Ala	Thr	Asp	Lys 1645	Gly	Ser	Pro	Pro	Met 1650	Ser	Glu	Ile
15	Thr 1655	Ser	Val	Arg	Ile	Phe	Val 1660	Thr	Ile	Ala	Asp	Asn 1665	Ala	Ser	Pro
20	Lys 1670	Phe	Thr	Ser	Lys	Glu	Tyr 1675	Ser	Val	Glu	Leu	Ser 1680	Glu	Thr	Val
25	Ser 1685	Ile	Gly	Ser	Phe	Val	Gly 1690	Met	Val	Thr	Ala	His 1695	Ser	Gln	Ser
30	Ser 1700	Val	Val	Tyr	Glu	Ile	Lys 1705	Asp	Gly	Asn	Thr	Gly 1710	Asp	Ala	Phe
35	Asp 1715	Ile	Asn	Pro	His	Ser	Gly 1720	Thr	Ile	Ile	Thr	Gln 1725	Lys	Ala	Leu
40	Asp 1730	Phe	Glu	Thr	Leu	Pro	Ile 1735	Tyr	Thr	Leu	Ile	Ile 1740	Gln	Gly	Thr
45	Asn 1745	Met	Ala	Gly	Leu	Ser	Thr 1750	Asn	Thr	Thr	Val	Leu 1755	Val	His	Leu
50	Gln 1760	Asp	Glu	Asn	Asp	Asn	Ala 1765	Pro	Val	Phe	Met	Gln 1770	Ala	Glu	Tyr
55	Thr 1775	Gly	Leu	Ile	Ser	Glu	Ser 1780	Ala	Ser	Ile	Asn	Ser 1785	Val	Val	Leu
60	Thr 1790	Asp	Arg	Asn	Val	Pro	Leu 1795	Val	Ile	Arg	Ala	Ala 1800	Asp	Ala	Asp
65	Lys 1805	Asp	Ser	Asn	Ala	Leu	Leu 1810	Val	Tyr	His	Ile	Val 1815	Glu	Pro	Ser
70	Val 1820	His	Thr	Tyr	Phe	Ala	Ile 1825	Asp	Ser	Ser	Thr	Gly 1830	Ala	Ile	His
75	Thr 1835	Val	Leu	Ser	Leu	Asp	Tyr 1840	Glu	Glu	Thr	Ser	Ile 1845	Phe	His	Phe
80	Thr 1850	Val	Gln	Val	His	Asp	Met 1855	Gly	Thr	Pro	Arg	Leu 1860	Phe	Ala	Glu



5	Tyr 1865	Ala	Ala	Asn	Val	Thr	Val 1870	His	Val	Ile	Asp	Ile 1875	Asn	Asp	Cys
10	Pro 1880	Pro	Val	Phe	Ala	Lys	Pro 1885	Leu	Tyr	Glu	Ala	Ser 1890	Leu	Leu	Leu
15	Pro 1895	Thr	Tyr	Lys	Gly	Val	Lys 1900	Val	Ile	Thr	Val	Asn 1905	Ala	Thr	Asp
20	Ala 1910	Asp	Ser	Ser	Ala	Phe	Ser 1915	Gln	Leu	Ile	Tyr	Ser 1920	Ile	Thr	Glu
25	Gly 1925	Asn	Ile	Gly	Glu	Lys	Phe 1930	Ser	Met	Asp	Tyr	Lys 1935	Thr	Gly	Ala
30	Leu 1940	Thr	Val	Gln	Asn	Thr	Thr 1945	Gln	Leu	Arg	Ser	Arg 1950	Tyr	Glu	Leu
35	Thr 1955	Val	Arg	Ala	Ser	Asp	Gly 1960	Arg	Phe	Ala	Gly	Leu 1965	Thr	Ser	Val
40	Lys 1970	Ile	Asn	Val	Lys	Glu	Ser 1975	Lys	Glu	Ser	His	Leu 1980	Lys	Phe	Thr
45	Gln 1985	Asp	Val	Tyr	Ser	Ala	Val 1990	Val	Lys	Glu	Asn	Ser 1995	Thr	Glu	Ala
50	Glu 2000	Thr	Leu	Ala	Val	Ile	Thr 2005	Ala	Ile	Gly	Ser	Pro 2010	Ile	Asn	Glu
55	Pro 2015	Leu	Phe	Tyr	His	Ile	Leu 2020	Asn	Pro	Asp	Arg	Arg 2025	Phe	Lys	Ile
60	Ser 2030	Arg	Thr	Ser	Gly	Val	Leu 2035	Ser	Thr	Thr	Gly	Thr 2040	Pro	Phe	Asp
65	Arg 2045	Glu	Gln	Gln	Glu	Ala	Phe 2050	Asp	Val	Val	Val	Glu 2055	Val	Ile	Glu
70	Glu 2060	His	Lys	Pro	Ser	Ala	Val 2065	Ala	His	Val	Val	Val 2070	Lys	Val	Ile
75	Val 2075	Glu	Asp	Gln	Asn	Asp	Asn 2080	Ala	Pro	Val	Phe	Val 2085	Asn	Leu	Pro
80	Tyr 2090	Tyr	Ala	Val	Val	Lys	Val 2095	Asp	Thr	Glu	Val	Gly 2100	His	Val	Ile

5 Arg Tyr Val Thr Ala Val Asp Arg Asp Ser Gly Arg Asn Gly Glu  
 2105 2110 2115  
 Val His Tyr Tyr Leu Lys Glu His His Glu His Phe Gln Ile Gly 2120  
 2125 2130  
 10 Pro Leu Gly Glu Ile Ser Leu Lys Lys Gln Phe Glu Leu Asp Thr  
 2135 2140 2145  
 15 Leu Asn Lys Glu Tyr Leu Val Thr Val Val Ala Lys Asp Gly Gly  
 2150 2155 2160  
 20 Asn Pro Ala Phe Ser Ala Glu Val Ile Val Pro Ile Thr Val Met  
 2165 2170 2175  
 25 Asn Lys Ala Met Pro Val Phe Glu Lys Pro Phe Tyr Ser Ala Glu  
 2180 2185 2190  
 Ile Ala Glu Ser Ile Gln Val His Ser Pro Val Val His Val Gln  
 2195 2200 2205  
 30 Ala Asn Ser Pro Glu Gly Leu Lys Val Phe Tyr Ser Ile Thr Asp  
 2210 2215 2220  
 35 Gly Asp Pro Phe Ser Gln Phe Thr Ile Asn Phe Asn Thr Gly Val  
 2225 2230 2235  
 40 Ile Asn Val Ile Ala Pro Leu Asp Phe Glu Ala His Pro Ala Tyr  
 2240 2245 2250  
 45 Lys Leu Ser Ile Arg Ala Thr Asp Ser Leu Thr Gly Ala His Ala  
 2255 2260 2265  
 Glu Val Phe Val Asp Ile Ile Val Asp Asp Ile Asn Asp Asn Pro  
 2270 2275 2280  
 50 Pro Val Phe Ala Gln Gln Ser Tyr Ala Val Thr Leu Ser Glu Ala  
 2285 2290 2295  
 55 Ser Val Ile Gly Thr Ser Val Val Gln Val Arg Ala Thr Asp Ser  
 2300 2305 2310  
 60 Asp Ser Glu Pro Asn Arg Gly Ile Ser Tyr Gln Met Phe Gly Asn  
 2315 2320 2325  
 His Ser Lys Ser His Asp His Phe His Val Asp Ser Ser Thr Gly  
 2330 2335 2340



5 Thr Val Asn Val Ile Leu Thr Asp Asp Asn Asp Asn Ala Pro Gln  
 2585 2590 2595  
 Phe Arg Ala Thr Lys Tyr Glu Val Asn Ile Gly Ser Ser Ala Ala  
 2600 2605 2610  
 10 Lys Gly Thr Ser Val Val Lys Ser Ala Ser Asp Ala Asp Glu Gly  
 2615 2620 2625  
 15 Ser Asn Ala Asp Ile Thr Tyr Ala Ile Glu Ala Asp Ser Glu Ser  
 2630 2635 2640  
 20 Val Lys Glu Asn Leu Glu Ile Asn Lys Leu Ser Gly Val Ile Thr  
 2645 2650 2655  
 25 Thr Lys Glu Ser Leu Ile Gly Leu Glu Asn Glu Phe Phe Thr Phe  
 2660 2665 2670  
 Phe Val Arg Ala Val Asp Asn Gly Ser Pro Ser Lys Glu Ser Val  
 2675 2680 2685  
 30 Val Leu Val Tyr Val Lys Ile Leu Pro Pro Glu Met Gln Leu Pro  
 2690 2695 2700  
 35 Lys Phe Ser Glu Pro Phe Tyr Thr Phe Thr Val Ser Glu Asp Val  
 2705 2710 2715  
 40 Pro Val Gly Thr Glu Ile Asp Leu Ile Arg Ala Glu His Ser Gly  
 2720 2725 2730  
 45 Thr Val Leu Tyr Ser Leu Val Lys Gly Asn Thr Pro Glu Ser Asn  
 2735 2740 2745  
 Arg Asp Glu Ser Phe Val Ile Asp Arg Gln Ser Gly Arg Leu Lys  
 2750 2755 2760  
 50 Leu Glu Lys Ser Leu Asp His Glu Thr Thr Lys Trp Tyr Gln Phe  
 2765 2770 2775  
 55 Ser Ile Leu Ala Arg Cys Thr Gln Asp Asp His Glu Met Val Ala  
 2780 2785 2790  
 60 Ser Val Asp Val Ser Ile Gln Val Lys Asp Ala Asn Asp Asn Ser  
 2795 2800 2805  
 Pro Val Phe Glu Ser Ser Pro Tyr Glu Ala Phe Ile Val Glu Asn  
 2810 2815 2820

5	Leu 2825	Pro	Gly	Gly	Ser	Arg	Val 2830	Ile	Gln	Ile	Arg	Ala 2835	Ser	Asp	Ala
10	Asp 2840	Ser	Gly	Thr	Asn	Gly	Gln 2845	Val	Met	Tyr	Ser	Leu 2850	Asp	Gln	Ser
15	Gln 2855	Ser	Val	Glu	Val	Ile	Glu 2860	Ser	Phe	Ala	Ile	Asn 2865	Met	Glu	Thr
20	Gly 2870	Trp	Ile	Thr	Thr	Leu	Lys 2875	Glu	Leu	Asp	His	Glu 2880	Lys	Arg	Asp
25	Asn 2885	Tyr	Gln	Ile	Lys	Val	Val 2890	Ala	Ser	Asp	His	Gly 2895	Glu	Lys	Ile
30	Gln 2900	Leu	Ser	Ser	Thr	Ala	Ile 2905	Val	Asp	Val	Thr	Val 2910	Thr	Asp	Val
35	Asn 2915	Asp	Ser	Pro	Pro	Arg	Phe 2920	Thr	Ala	Glu	Ile	Tyr 2925	Lys	Gly	Thr
40	Val 2930	Ser	Glu	Asp	Asp	Pro	Gln 2935	Gly	Gly	Val	Ile	Ala 2940	Ile	Leu	Ser
45	Thr 2945	Thr	Asp	Ala	Asp	Ser	Glu 2950	Glu	Ile	Asn	Arg	Gln 2955	Val	Thr	Tyr
50	Phe 2960	Ile	Thr	Gly	Gly	Asp	Pro 2965	Leu	Gly	Gln	Phe	Ala 2970	Val	Glu	Thr
55	Ile 2975	Gln	Asn	Glu	Trp	Lys	Val 2980	Tyr	Val	Lys	Lys	Pro 2985	Leu	Asp	Arg
60	Glu 2990	Lys	Arg	Asp	Asn	Tyr	Leu 2995	Leu	Thr	Ile	Thr	Ala 3000	Thr	Asp	Gly
65	Thr 3005	Phe	Ser	Ser	Lys	Ala	Ile 3010	Val	Glu	Val	Lys	Val 3015	Leu	Asp	Ala
70	Asn 3020	Asp	Asn	Ser	Pro	Val	Cys 3025	Glu	Lys	Thr	Leu	Tyr 3030	Ser	Asp	Thr
75	Ile 3035	Pro	Glu	Asp	Val	Leu	Pro 3040	Gly	Lys	Leu	Ile	Met 3045	Gln	Ile	Ser
80	Ala 3050	Thr	Asp	Ala	Asp	Ile	Arg 3055	Ser	Asn	Ala	Glu	Ile 3060	Thr	Tyr	Thr

5      Leu Leu   Gly Ser Gly Ala   Glu   Lys Phe Lys Leu Asn   Pro Asp Thr  
          3065                                   3070                                   3075

10      Gly Glu   Leu Lys Thr Ser   Thr   Pro Leu Asp Arg   Glu   Glu Gln Ala  
          3080                                   3085                                   3090

15      Val Tyr   His Leu Leu Val   Arg   Ala Thr Asp Gly   Gly   Gly Arg Phe  
          3095                                   3100                                   3105

20      Cys Gln   Ala Ser Ile Val   Val   Thr Leu Glu Asp   Val   Asn Asp Asn  
          3110                                   3115                                   3120

25      Ala Pro   Glu Phe Ser Ala   Asp   Pro Tyr Ala Ile   Thr   Val Phe Glu  
          3125                                   3130                                   3135

30      Asn Thr   Glu Pro Gly Thr   Leu   Leu Thr Arg Val   Gln   Ala Thr Asp  
          3140                                   3145                                   3150

35      Ala Asp   Ala Gly Leu Asn   Arg   Lys Ile Leu Tyr   Ser   Leu Ile Asp  
          3155                                   3160                                   3165

40      Ser Ala   Asp Gly Gln Phe   Ser   Ile Asn Glu Leu   Ser   Gly Ile Ile  
          3170                                   3175                                   3180

45      Gln Leu   Glu Lys Pro Leu   Asp   Arg Glu Leu Gln   Ala   Val Tyr Thr  
          3185                                   3190                                   3195

50      Leu Ser   Leu Lys Ala Val   Asp   Gln Gly Leu Pro   Arg   Arg Leu Thr  
          3200                                   3205                                   3210

55      Ala Thr   Gly Thr Val Ile   Val   Ser Val Leu Asp   Ile   Asn Asp Asn  
          3215                                   3220                                   3225

60      Pro Pro   Val Phe Glu Tyr   Arg   Glu Tyr Gly Ala   Thr   Val Ser Glu  
          3230                                   3235                                   3240

65      Asp Ile   Leu Val Gly Thr   Glu   Val Leu Gln Val   Tyr   Ala Ala Ser  
          3245                                   3250                                   3255

70      Arg Asp   Ile Glu Ala Asn   Ala   Glu Ile Thr Tyr   Ser   Ile Ile Ser  
          3260                                   3265                                   3270

75      Gly Asn   Glu His Gly Lys   Phe   Ser Ile Asp Ser   Lys   Thr Gly Ala  
          3275                                   3280                                   3285

80      Val Phe   Ile Ile Glu Asn   Leu   Asp Tyr Glu Ser   Ser   His Glu Tyr  
          3290                                   3295                                   3300

Tyr Leu Thr Val Glu Ala Thr Asp Gly Gly Thr Pro Ser Leu Ser  
 3305 3310 3315  
 5

Asp Val Ala Thr Val Asn Val Asn Val Thr Asp Ile Asn Asp Asn  
 3320 3325 3330  
 10

Thr Pro Val Phe Ser Gln Asp Thr Tyr Thr Thr Val Ile Ser Glu  
 3335 3340 3345  
 15

Asp Ala Val Leu Glu Gln Ser Val Ile Thr Val Met Ala Asp Asp  
 3350 3355 3360  
 20

Ala Asp Gly Pro Ser Asn Ser His Ile His Tyr Ser Ile Ile Asp  
 3365 3370 3375  
 25

Gly Asn Gln Gly Ser Ser Phe Thr Ile Asp Pro Val Arg Gly Glu  
 3380 3385 3390  
 30

Val Lys Val Thr Lys Leu Leu Asp Arg Glu Thr Ile Ser Gly Tyr  
 3395 3400 3405  
 35

Thr Leu Thr Val Gln Ala Ser Asp Asn Gly Ser Pro Pro Arg Val  
 3410 3415 3420  
 40

Asn Thr Thr Thr Val Asn Ile Asp Val Ser Asp Val Asn Asp Asn  
 3425 3430 3435  
 45

Ala Pro Val Phe Ser Arg Gly Asn Tyr Ser Val Ile Ile Gln Glu  
 3440 3445 3450  
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Asn Lys Pro Val Gly Phe Ser Val Leu Gln Leu Val Val Thr Asp  
 3455 3460 3465  
 55

Glu Asp Ser Ser His Asn Gly Pro Pro Phe Phe Phe Thr Ile Val  
 3470 3475 3480  
 60

Thr Gly Asn Asp Glu Lys Ala Phe Glu Val Asn Pro Gln Gly Val  
 3485 3490 3495  
 65

Leu Leu Thr Ser Ser Ala Ile Lys Arg Lys Glu Lys Asp His Tyr  
 3500 3505 3510  
 70

Leu Leu Gln Val Lys Val Ala Asp Asn Gly Lys Pro Gln Leu Ser  
 3515 3520 3525  
 75

Ser Leu Thr Tyr Ile Asp Ile Arg Val Ile Glu Glu Ser Ile Tyr  
 3530 3535 3540





5	Cys 3785	Lys	Glu	Gly	Arg	Cys	Pro 3790	Pro	Val	His	His	Gly 3795	Cys	Glu	Asp
10	Asp 3800	Pro	Cys	Pro	Glu	Gly	Ser 3805	Glu	Cys	Val	Ser	Asp 3810	Pro	Trp	Glu
15	Glu 3815	Lys	His	Thr	Cys	Val	Cys 3820	Pro	Ser	Gly	Arg	Phe 3825	Gly	Gln	Cys
20	Pro 3830	Gly	Ser	Ser	Ser	Met	Thr 3835	Leu	Thr	Gly	Asn	Ser 3840	Tyr	Val	Lys
25	Tyr 3845	Arg	Leu	Thr	Glu	Asn	Glu 3850	Asn	Lys	Leu	Glu	Met 3855	Lys	Leu	Thr
30	Met 3860	Arg	Leu	Arg	Thr	Tyr	Ser 3865	Thr	His	Ala	Val	Val 3870	Met	Tyr	Ala
35	Arg 3875	Gly	Thr	Asp	Tyr	Ser	Ile 3880	Leu	Glu	Ile	His	His 3885	Gly	Arg	Leu
40	Gln 3890	Tyr	Lys	Phe	Asp	Cys	Gly 3895	Ser	Gly	Pro	Gly	Ile 3900	Val	Ser	Val
45	Gln 3905	Ser	Ile	Gln	Val	Asn	Asp 3910	Gly	Gln	Trp	His	Ala 3915	Val	Ala	Leu
50	Glu 3920	Val	Asn	Gly	Asn	Tyr	Ala 3925	Arg	Leu	Val	Leu	Asp 3930	Gln	Val	His
55	Thr 3935	Ala	Ser	Gly	Thr	Ala	Pro 3940	Gly	Thr	Leu	Lys	Thr 3945	Leu	Asn	Leu
60	Asp 3950	Asn	Tyr	Val	Phe	Phe	Gly 3955	Gly	His	Ile	Arg	Gln 3960	Gln	Gly	Thr
65	Arg 3965	His	Gly	Arg	Ser	Pro	Gln 3970	Val	Gly	Asn	Gly	Phe 3975	Arg	Gly	Cys
70	Met 3980	Asp	Ser	Ile	Tyr	Leu	Asn 3985	Gly	Gln	Glu	Leu	Pro 3990	Leu	Asn	Ser
75	Lys 3995	Pro	Arg	Ser	Tyr	Ala	His 4000	Ile	Glu	Glu	Ser	Val 4005	Asp	Val	Ser
80	Pro 4010	Gly	Cys	Phe	Leu	Thr	Ala 4015	Thr	Glu	Asp	Cys	Ala 4020	Ser	Asn	Pro

5 Cys Gln Asn Gly Gly Val Cys Asn Pro Ser Pro Ala Gly Gly Tyr  
 4025 4030 4035  
 Tyr Cys Lys Cys Ser Ala Leu Tyr Ile Gly Thr His Cys Glu Ile 4040  
 4045 4050  
 10 Ser Val Asn Pro Cys Ser Ser Asn Pro Cys Leu Tyr Gly Gly Thr  
 4055 4060 4065  
 15 Cys Val Val Asp Asn Gly Gly Phe Val Cys Gln Cys Arg Gly Leu  
 4070 4075 4080  
 20 Tyr Thr Gly Gln Arg Cys Gln Leu Ser Pro Tyr Cys Lys Asp Glu  
 4085 4090 4095  
 25 Pro Cys Lys Asn Gly Gly Thr Cys Phe Asp Ser Leu Asp Gly Ala  
 4100 4105 4110  
 Val Cys Gln Cys Asp Ser Gly Phe Arg Gly Glu Arg Cys Gln Ser  
 4115 4120 4125  
 30 Asp Ile Asp Glu Cys Ser Gly Asn Pro Cys Leu His Gly Ala Leu  
 4130 4135 4140  
 35 Cys Glu Asn Thr His Gly Ser Tyr His Cys Asn Cys Ser His Glu  
 4145 4150 4155  
 40 Tyr Arg Gly Arg His Cys Glu Asp Ala Ala Pro Asn Gln Tyr Val  
 4160 4165 4170  
 45 Ser Thr Pro Trp Asn Ile Gly Leu Ala Glu Gly Ile Gly Ile Val  
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 Val Phe Val Ala Gly Ile Phe Leu Leu Val Val Val Phe Val Leu  
 4190 4195 4200  
 50 Cys Arg Lys Met Ile Ser Arg Lys Lys Lys His Gln Ala Glu Pro  
 4205 4210 4215  
 55 Lys Asp Lys His Leu Gly Pro Ala Thr Ala Phe Leu Gln Arg Pro  
 4220 4225 4230  
 60 Tyr Phe Asp Ser Lys Leu Asn Lys Asn Ile Tyr Ser Asp Ile Pro  
 4235 4240 4245  
 Pro Gln Val Pro Val Arg Pro Ile Ser Tyr Thr Pro Ser Ile Pro  
 4250 4255 4260

5 Ser Asp 4265 Ser Arg Asn Asn Leu 4270 Asp Arg Asn Ser Phe 4275 Glu Gly Ser  
 10 Ala Ile 4280 Pro Glu His Pro Glu 4285 Phe Ser Thr Phe Asn 4290 Pro Glu Ser  
 15 Val His 4295 Gly His Arg Lys Ala 4300 Val Ala Val Cys Ser 4305 Val Ala Pro  
 20 Asn Leu 4310 Pro Pro Pro Pro Pro 4315 Ser Asn Ser Pro Ser 4320 Asp Ser Asp  
 25 Ser Ile 4325 Gln Lys Pro Ser Trp 4330 Asp Phe Asp Tyr Asp 4335 Thr Lys Val  
 Val Asp 4340 Leu Asp Pro Cys Leu 4345 Ser Lys Lys Pro Leu 4350 Glu Glu Lys  
 30 Pro Ser 4355 Gln Pro Tyr Ser Ala 4360 Arg Glu Ser Leu Ser 4365 Glu Val Gln  
 35 Ser Leu 4370 Ser Ser Phe Gln Ser 4375 Glu Ser Cys Asp Asp 4380 Asn Glu Ser  
 40 Leu Ala 4385 Ala Pro Asp Leu Ser 4390 Lys Pro Arg Gly Tyr 4395 His Trp Asp  
 45 Thr Ser 4400 Asp Trp Met Pro Ser 4405 Val Pro Leu Pro Asp 4410 Ile Gln Glu  
 Phe Pro 4415 Asn Tyr Glu Val Ile 4420 Asp Glu Gln Thr Pro 4425 Leu Tyr Ser  
 50 Ala Asp 4430 Pro Asn Ala Ile Asp 4435 Thr Asp Tyr Tyr Pro 4440 Gly Gly Tyr  
 Asp Ile 4445 Glu Ser Asp Phe Pro 4450 Pro Pro Pro Glu Asp 4455 Phe Pro Ala  
 55 Ala Asp 4460 Glu Leu Pro Pro Leu 4465 Pro Pro Glu Phe Ser 4470 Asn Gln Phe  
 60 Glu Ser 4475 Ile His Pro Pro Arg 4480 Asp Met Pro Ala Ala 4485 Gly Ser Leu  
 Gly Ser 4490 Ser Ser Arg Asn Arg 4495 Gln Arg Phe Asn Leu 4500 Asn Gln Tyr



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5	atgttgaacc	acaccatcgc	gatccgcttt	gccaacctca	ctccggaaga	attcgttggg	1020
	gactactggc	gcaacttcca	gcgagcttta	cggaaacatcc	tgggtgtgag	gaggaacgac	1080
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30	tgaatgggtg	ggtatacttt	tatttttaaa	aatcggtttc	attgtttctt	accattttct	1740
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	atgaataaag	aatgacagta	gtaagttttg	cttctctctg	ttacagcaca	ccccttggtt	1860
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